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An Examination of Adult Learners, Learning Outcomes, and Selected Learning Environments at a Land-Grant Research I University.

Anne L. Zoeller

Louisiana State University and Agricultural & Mechanical College

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UMI
AN EXAMINATION OF ADULT LEARNERS, LEARNING OUTCOMES, AND SELECTED LEARNING ENVIRONMENTS AT A LAND-GRANT RESEARCH UNIVERSITY

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy in The School of Vocational Education

by

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Abstract

Population projections predicting dramatic increases in demand for higher education, and the explosive increase in technologies which may be essential to meet demand, are motivating changes in the culture of higher education. The purpose of this study was to describe characteristics of courses offered and learners served by the Louisiana State University Evening School in different learning environments; and to compare characteristics of learners enrolled in the course by the medium through which the course was delivered (defined as on-campus, telecourse, and off-campus). Data were collected from institutional records, course and instructor evaluations, and from the course syllabi provided by the instructors. A single introductory course in psychology was used in this study in order to minimize error due to subject matter effects.

There were 213 learners enrolled in eight sections of the course. Selected characteristics of learners, instructors, learning materials, enrollments, and learning outcomes were described; and selected learner, instructor and outcome information were compared across learning environments. Over 90% of learners were single, and almost 70% were women. The majority of learners were under the age of 33, white, and more likely to be enrolled as undergraduates than as adult special students. Recommendations included tracking learners to aid outreach to underserved populations, providing learners with detailed course information to decrease obstacles to taking courses, and working with other organizational units to assess the needs of all learners.
Introduction

“Academic pundits frequently comment that the pace of innovation in higher education can be measured by the 40 years it took to get the overhead projector out of the bowling alley and into the classroom.” (Green, 1996, p. 24)

Two important and related contemporary phenomena are motivating changes in the organizational culture of institutions of higher education. These are: population projections predicting dramatic increases in demand for higher education, and the explosive increase in technologies which may be essential in helping higher education institutions meet this demand. The population projections largely comprise the demand side and portend changes in the number and nature of consumers (learners). The supply side, providers (institutions) planning to meet this demand in a time of limited resources, may use educational technology to meet some of the increased demand for their products and to maintain their market shares.

Contemporary challenges to higher education include: how to improve educational outcomes, extend access to an older and more diverse set of learners, maintain services to traditional learners, support instructors, encourage collaborative development efforts, and control costs, all at the same time. Though changes in higher education have always occurred in waves (Dean, 1994; Gilbert, 1996b; Miller, 1985; Rippa, 1992), it is instructive to examine the conditions and changes pertinent to the current situation and to investigate the manner in which institutions are preparing to meet the projections for the early 21st century.
Projections for the year 2010 indicate that colleges and universities, which presently enroll approximately 15 million people, will enroll 20 million people, approximately half of whom will be age twenty-five and older. Though the larger colleges and universities will absorb some of this growth, existing two-year and four-year accredited colleges and universities will not likely be able to absorb a 25 percent enrollment gain. The state and federal governments are unlikely to finance many new colleges and campuses as was done to accommodate World War II veterans; thus, the market for distance education appears to have significant growth potential (Green, 1997).

The concept of market shares, once considered to be increased enrollments, has to be augmented by consideration of market segments, or serving a more diverse population of learners by targeting products and programs for different segments. The need to target programs for different types and increased numbers of learners is part of the demand for distance education systems and is driven by a combination of new technologies and improved access to them, demographics, competition among higher education institutions and with commercial providers of educational services, and employer demand for more highly educated employees (Aurand, 1994).

Higher education institutions are striving to enroll and retain more adult learners, many of whom must study at home or work. In some states the need to extend access is reaching a crisis. Educators are also helping learners use more powerful resources such as libraries, experts, and laboratories worldwide, rather than restricting those learners to only those resources that the institution
can buy and maintain on-campus. In each of these strategies, computers, video and telecommunications play an essential role (Ehrmann, 1995).

The pace of integrating new educational methods, technologies, and instructional delivery systems in higher education has accelerated greatly since the example of the overhead projector. Higher education administrations, government entities, political groups, community groups, and learners are increasing pressure to educate more students with new technologies.

In the academic year 1994-95, one-third of the approximately 3,460 U.S. two-year and four-year higher education institutions offered an estimated 25,730 distance education courses with different catalog numbers. There were an estimated 753,640 students formally enrolled in distance education courses in academic year 1994-95. In 1994-1995, an estimated 3,430 students received degrees offered by 285 institutions and 1,970 received certificates offered by 80 institutions by taking distance education courses exclusively (U.S. Department of Education, 1997).

Higher education institutions have had mixed results with distance education programs. There was a belief that if the institution had technology, any instructor could teach a course in the usual manner, and by allowing large enrollments, the institution would realize vast additional revenues. Once technology advanced to the point of one-way video, two-way audio, distance education courses would be 'just like' on-campus courses. Few questioned whether there were inherent differences between distance and traditional teaching and learning or if on-campus courses could also use improvements.
In short, many distance education professionals and learners have had to proceed without a blueprint for a complex job (Denning, 1996; Gallo, 1997).

Universities are trying to become more flexible in meeting shifting markets while maintaining or improving quality. The need for flexibility is driving the evolution of the university to a more market-based culture, which prioritizes its products based on contemporaneous missions of service, teaching and research. At times these missions compete for resources and this competition requires more intra-institutional cooperation and collaboration, which are not hallmarks of the traditional organizational culture of institutions of higher education.

As previously stated, almost one-half of the new learners projected by the U.S. Department of Education (1996) will be over the age of twenty-five. This increase is driving higher education institutions to examine more closely programs targeted for these adult learners. One of the major factors complicating programs designed for adult learners is that learners are not a homogeneous population.

Another change in organizational culture of universities and colleges is the shift from an instructor-centered learning environment to one that is more learner-centered. Consistent with that shift, universities and colleges are trying to determine how to serve learners using a variety of learning environments. Colleges and universities cannot afford to assume that traditional learning environments, such as that of an instructor delivering lectures on-campus to traditional learners, are obsolete. Nor can they afford to attempt to increase
market shares in all potential market segments using distance learning. Such thinking not only eliminates consideration of different needs and learning styles of learners, it minimizes the potential for improving traditional learning environments to retain traditional students and attract non-traditional students.

The concept of the learning environment is crucial to understanding the importance of changing the organizational culture of institutions of higher education. It is especially important in dealing with the challenges of integrating educational technology into courses and programs that meet the needs of the rapidly expanding and changing population of adult learners.

In one view of learning environments, Moore and Kearsley (1996) describe examples of learning environments in distance education, such as a small group of learners enrolled in a course delivered by teleconferencing. (pp. 12-15) In this context the learning environment is a classroom or conference room at some type of learning or community setting. They then generalize to a systems model of inputs and outputs of distance education. The inputs comprise the learning environment and the outputs comprise learning and course outcomes. Thus the learning environment comprises, physical setting, student characteristics, instructor/tutor experience, competence of administrative staff, efficiency of course development, students' access to resources, response time, local site coordination, institutional cooperation/support, and reliability of evaluation.

Moore and Kearsley (1996) relate learning environment to distance education systems, which comprise "all the processes that make up distance
education, as well as the technologies and media used to deliver instruction and facilitate communications, institutional history and philosophy, and the learning environment created by all components". (p. 9)

Malcolm Knowles (1980) introduced the concept of learning climate. Since the early 1970s adult educators have been aware of how the environment affects learning. Adults may find some learning environments to be inhospitable. Rather than learners trying to change who they are so that they will fit in, adult educators must create learning environments in which all learners can thrive (Imel, 1996). More recently, adult educators are recognizing that factors in the learning environment related to psychological, social, and cultural conditions also exert a powerful influence on the growth and development of learners (Hiemstra as cited in Imel, 1996).

Land-Grant Research 1 universities are evolving to meet the same challenges as other institutions, and these institutions have special capabilities and constraints in adapting to change. On the one hand land-grant institutions have a long tradition of outreach and community service, as well as cooperation and collaborations with Cooperative Extension Services and various departmental faculty members whose research interests are pertinent to the land-grant mission. On the other hand, Research 1 Universities have a mandate to maintain their status through research, publishing research in peer-reviewed scholarly journals, attracting and retaining outstanding research faculty, and attracting top-quality graduate students to maintain a healthy graduate degree program.
Louisiana State A&M University is both a land-grant institution and a Research 1 university. As such, management of larger and more diverse learner populations may follow the model of the Agricultural Extension outreach programs, and devising curricula for non-traditional students may use the essential courses approach of the Research 1 universities. Using current and emerging technologies as part of traditional and distance education systems will necessitate using expertise from both the A&M model and the Research 1 model to reach learners in rural areas, develop contacts in learning centers, prioritize and develop specifications for technology acquisitions and implementation, and ensuring access to and training in the use of new technology as part of learning systems.

Priorities for programs which use human, technological and institutional resources include decisions such as whether to offer courses in other states and/or other in-state institutions; or emphasize increased enrollment in and numbers of courses offered at the institution; and how to apportion technology resources between distance education and on-campus education (Educom Staff, 1996; Kestner, Hall, Butler, & Limbach, 1997). The rapid development of new technologies and the need for clear priorities, present an interdependent set of challenges for post-secondary education. Continuing changes in the student population add more complexity to these efforts (Aurand, 1994).

**Rationale**

The present study focuses on adult learners and selected learning environments. In order to accommodate increased numbers and variety of
learners, it will be necessary to put learner and faculty needs and expertise at
the center of developing courses and programs for learners in a variety of
learning environments. There is disagreement over whether there are
significant differences in learning outcomes, usually measured as grades,
attributable to different educational delivery systems, including the traditional
classroom lecture. In the past four-to-five years, results of research studies
supporting either side have been tabulated, presented and distributed.

Research by Russell (1996) showed no significant difference in learning
outcomes, while Orr's (1997) research indicated significant difference in
learning outcomes. More studies are needed which focus on multiple facets of
course-building and course delivery, as well as more comprehensive measures
of educational (system) outcomes (Johnstone & Krauth, 1996).

Telecourses and off-campus courses are among the oldest
asynchronous and synchronous instructional delivery systems for distance
learning (Daniel, 1996). Revisiting these 'old' systems in terms of their future
viability may demonstrate that instructors need not throw out their hours of
preparation and development in order to improve telecourses or integrate them
into mixed media courses. Telecourses are compared to both traditional
on-campus lectures, and traditional lectures delivered off-campus at institutions
in the general area of the University. When information regarding instructional
delivery systems is combined with information about learners, instructors,
learning materials and learning outcomes, a picture of these specific learning
environments appears. When learner, instructor and outcome information is
compared across delivery systems, indications of whether different types of adult learners (and traditional learners in the course) prefer different learning environments may be elicited for these specific environments.

**Significance of the Study in Terms of Putting Outcomes into Practice**

If shaping learning environments for adult learners is to be viewed as a market-based venture, it is necessary to look at past marketing studies and needs assessments in order to evaluate their recommendations and use the data for incorporation into plans for expanding traditional and distance education programs (Culross, 1995; Grady, 1995). Concepts such as marketing LSU courses and distance education courses are foreign to many faculty members and learners. There are concerns about learner access to instructors and quality of instructors. However, if the educational technologies and media libraries are used to serve learners and instructors, the need for quality faculty is not eliminated, but quality faculty may be used more effectively (Massy & Zemsky, 1995). Distance education initiatives are a potential showcase for LSU -- the best professors providing effective instruction tailored to the needs of traditional and non-traditional learners.

The results of this study may be used as part of the overall effort to evaluate and improve distance education programs at the LSU Evening School. One major area of concentration is identifying how to meet the changing needs of Evening School learners and instructors. Results from this study will add to the body of knowledge about Evening School distance education programs by characterizing learners and comparing parts of the distance education system.
for two well-established delivery systems, telecourses and off-campus courses. Such characterizations and comparisons have been recommended and used by other researchers and institutions in developing cohesive distance education delivery systems. (Dill, 1996; Gallo, 1997; Green, 1997; Wallace, 1997).

Comparing education outcomes among systems and determining system characteristics that have the greatest influence on outcomes will provide a basis for future programs, as well as for comparing the effects of significant system characteristics with those described in other studies. Once there is a picture of how LSU distance education systems resemble other institutions' successful systems, collaborations may be initiated with compatible institutions and recommendations can be made about whether or how to integrate telecourses and off-campus courses into more comprehensive, mixed media, distance education delivery systems. These recommendations can be used in planning long-term distance education programs (Lyons & Washburn, 1995; McRoberts, Sonkowsky, & Strand, 1995; Sandmann, 1993; Western Cooperative for Educational Telecommunications; 1997).

Finally, by using archival data from different sources within the institution, it can be determined which sources may be useful for long range planning, what additional data should be collected, and how different data sources can best be combined and analyzed (Dill, 1996; Hoachlander, 1991).

Statement of Problem

Louisiana State University is facing a period of change in the numbers and types of learners being served. The increasing number of non-traditional
students and LSU’s affiliation with the future Baton Rouge Community College offer special opportunities for the LSU Evening School. Since the Baton Rouge Community College is a new institution started under unusual circumstances (court order), there is not yet a database of information about the learners. However, there are similarities among Evening School students (Culross, 1995) and community college students in general (Beck, Copa, & Pease, 1991; Boyer, 1994; Fujita-Starck, 1996; Norland, 1992; Okun, Benin, & Brandt-Williams, 1996). Both groups of students tend to be older, working, need the convenience of courses offered in the evening or on weekends, may have children and thus need courses delivered to them, and have immediate educational goals. The Evening School’s ongoing formal planning provides a structure for expanding and prioritizing focus areas in order to meet the needs of transfer students from community colleges and other institutions, while improving services for core constituencies of adult learners.

Purpose and Objectives of Study

The primary purpose of this study was to describe and compare selected characteristics of learners served and courses offered by the LSU Evening School, by the medium through which the course was delivered (defined as on-campus, telecourse, and off-campus). The following objectives were formulated to guide the researcher in accomplishing the purposes of the study.

Evening School sections of Introduction to Psychology (PSYC2000) for the period Spring, 1995, through Fall, 1996 (excluding Intersessions), were examined in this study. The objectives and variables for this study were:

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1. Describe learners served by the LSU Evening School (ES) on selected personal and academic demographic characteristics. The learner characteristics described were:

(a) entering status at registration, (b) gender; (c) age, (d) ethnicity, (e) marital status, (f) residential status, (g) citizenship status, (h) overall grade point average (GPA) at the time of enrollment in the specified course, (i) grade in specified course, (j) semester GPA and overall GPA for the semester of enrollment in the specified course, (k) number of credit hours for the semester of enrollment in the specified course, (l) number of semesters of continuous enrollment, (m) standard test scores, (n) level of previous education, (o) college, as of beginning of semester of enrollment in course, and (p) registration date for the course.

2. Describe the specified course offered through the LSU Evening School on the following characteristics:

(a) course schedule (including day(s) and location); (b) type of learning environment; (c) pre-registered course enrollment, initial course enrollment, final course enrollment; (d) selected instructor characteristics, including age, teaching load, and university employment status and rank, if applicable; (e) availability of syllabus; (f) required text, recommended supplemental readings; (g) required and recommended participation in audiovisual and other instructional activities as reported in the course syllabus; (h) required and recommended use of computer...
activities as reported in the course syllabus; and (i) number of instructor's office hours as reported in the course syllabus.

3. Describe the perceptions of the learners regarding the following learning environment and course instructor characteristics:
   (a) overall quality of course, (b) quality of instruction, and (c) availability of instructor for student contact.

4. Describe the following learning outcomes for learners enrolled in the specified course:
   (a) grade learners earned in the course, (b) semester GPA and overall GPA, (c) whether the learner enrolled in subsequent psychology or psychology-related (sociology courses) courses, (d) hours of psychology or psychology-related courses in which learner enrolled during the two semesters of enrollment following enrollment in the course, (e) learner's grade point average in course work in this area, and (f) learner's overall GPA after two semesters of enrollment following enrollment in course.

5. Determine if differences exist in the following factors by type of learning environment (defined as on-campus lecture, telecourse, off-campus lecture):
   (a) percentage of learners completing course, (b) learner's number of semesters of continuous enrollment, (c) learner courseload during semester of enrollment in course (number of credit hours), (d) college of enrollment as of beginning of semester of enrollment in course, (e) learner's age, (f) gender, (g) learner's marital status, (h) semester GPA, (i) grade earned in the course, (j) whether or not learners enrolled in
subsequent psychology or psychology-related (sociology) courses, (k) learner's overall rating for course, (l) learner's perceived contact with instructor, (m) learner's overall GPA at the time of enrollment in the specified course; and (n) learner's overall GPA at the end of the second semester of enrollment following enrollment in the subject course.

Definitions of Terms

Adult education - a process whereby persons whose major social roles are characteristic of adult status undertake systematic and sustained learning activities for the purpose of bringing about changes in knowledge, attitudes, values, or skills (Darkenwald & Merriam cited in Merriam & Brockett, 1997, p.7).

ALS - Adult Learning Service, a service started by PBS in 1981 to make college-level telecourses and other learning experiences available to adult learners nationwide (American Council on Education, 1994).

Andragogy - initially defined as "the art and science of helping adults learn," (Knowles, 1980); currently defines an alternative to pedagogy and refers to learner-focused education for people of all ages, with instructors as facilitators or resources.

Asynchronous - communication in which interaction between sender and receiver does not take place simultaneously, e.g., e-mail, fax (Moore & Kearsley, 1996).

Compressed video - video images in digital form that allows redundant information to be eliminated, thereby reducing the amount of bandwidth needed.
for their transmission. The amount of compression (bandwidth) determines the picture quality.

**Continuation status** - describes students' enrollment histories; i.e., was the student enrolled in semesters preceding or following semester of interest?

**Course evaluation** - in this study, term refers to student evaluation of the course quality at the end of the semester.

**Course outcomes** - results of completing a course, divided into performance and organizational measures.

**Distance learning** - (a) a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction and certification of learning (Staff, Distance Education Clearing House, 1997). (b) a variety of educational models that have in common the physical separation of the faculty member and some or all of the students (Staff, Institute for Distance Education, 1996).

**Enrollment numbers on the 14th day** - official enrollment count, number enrolled in a class on the 14th day of instruction (Office of Budget & Planning).

**Entering status** - the admissions status for a student at the time they register for the particular course involved

**Flexible learning** - multi-channel learning, augments or replaces traditional classroom activities with a range of technologies such as interactive multimedia, video teleconferencing, and e-mail (Daniel, 1996, p. 59)

**ID#** - the identification number (social security number) for faculty, staff, and students.
Instructor evaluation - in this study, these are filled out by students at the end of a course and convey students' impression of the instructor's effectiveness.

Learning outcomes - level of achievement of learning goals; five outcomes of learning: a) intellectual skills (discriminations, concrete concepts, rules and defined concepts, higher order rules, problem solving), b) verbal information, c) cognitive strategies (acquiring and applying information to solve problems), d) attitudes, e) motor skills (Dean, 1994, p. 66).

Learning provider - the organization that creates and facilitates the learning opportunity and monitors the quality of the learning experience.

Lifelong education/lifelong learning - a concept operationalized as restructuring the existing education system and developing potential new education systems; usually assumes increased learner responsibility their own learning (U.S. Department of Education, 1997).

Mixed media - course delivery systems that combine different media. Different from multimedia in that instruction may be presented through a variety of distance and traditional learning environments and may use parts of other programs and media all in the same course.

Multimedia - Any document or presentation which uses multiple forms of communication, such as text, audio, or video.

Organizational measures - a type of measure which combines learner satisfaction and organizational performance. Examples: retention rates, graduation rates, program completion, job placement rates, attendance,
enrollments, revenues, contact with instructors, satisfaction with administration. (Gloster, 1994; Hoachlander, 1991).

**PASS program** - the LSU Evening School Program for Adult Special Students, which allows adults to re-enter or enter LSU without standard test scores or post-secondary school transcripts in order to take courses which will allow the individual to build an academic record and have the option of then being admitted as a regular degree-seeking student.

**Performance measure** - a type of outcome which is appropriate indicator for accountability; these include student achievement test scores, competency gains, gains in academic achievement, performance in other courses.

**Performance standard** - level of measure considered acceptable for a particular measure. (Hoachlander, 1991).

**Program evaluation** - a formal study of a program such as a curriculum or group of courses, using accepted methodologies and instruments, and leading to recommendations concerning how effective the program is in meeting its objectives, its utility in terms of audience and cost and other factors.

**Synchronous course delivery** - interaction between sender and receiver takes place so rapidly as to seem simultaneous to the receiver and sender, e.g., traditional on-campus courses, compressed video courses.

**Telecourse** - a complete educational system that generally includes videotapes, a textbook, additional printed materials, homework, and exams, all designed to be used by students as a college course. (Carvin, 1997; Trowt-Bayard, 1997).
Review of Literature

The following review of related literature is divided into four sections. The first section provides theories and conceptual frameworks relevant to adult learning, learning environments, and distance education. Section two reviews research pertaining to learning environments, innovation, learner perceptions, instructional technologies, and equivalence of learning environments. Section three reports on the current status of distance education. Section four discusses institutional climate in the context of how higher education institutions accommodate, retain and support adult learners and distance learners, without neglecting their traditional learner base.

Theories and Conceptual Frameworks

Adult Learning Theory

There are a few important differences between andragogy and pedagogy; but the outcome of their many similarities is that the terms are often used interchangeably. The differences between these two terms are related to differences in the way adults learn and the way children learn. Since an adult is a person regarded by his/her culture as an adult, different cultures may regard college students as adults or children. While some differences are chiefly semantic, they are important in the way we view adult learners.

The major differences between adult learning (andragogy) and children’s learning (pedagogy) include: the child's learning experience is a starting point from which to build experience, while the adult's experience serves as a resource for further learning; the child’s learning orientation for learning is
subject-centered, while the adult's is problem-centered; the child's motivation is
external, the adult's is internal; and the child learner is expected to be
dependent, while adults are expected to be self-directed (Brookfield, 1986;
Knowles, 1980). The designation of the adult learner as self-directed may be
premature for some adults.

Andragogical theory states that five issues must be considered and
addressed in formal learning. These are: 1) letting learners know why
something is important to learn, 2) showing learners how to direct themselves
through information, 3) relating the topic to the learners' experiences, 4)
recognizing that people will not learn until they are ready and motivated to
learn, and 5) helping learners overcome inhibitions, behaviors, and beliefs
about learning (Knowles, 1980).

The theory is based on four assumptions about adult learners: adults
tend to be self-directing, adults have experiences that can serve as a resource
for learning, adults tend to have a life- or task-centered approach to learning
rather than a subject matter orientation, and adults are motivated to learn due
to intrinsic factors as opposed to or extrinsic forces (Brookfield, 1986).

The model further states that adult learners should assess their own
needs, define their goals, set their own learning objectives, choose methods
and resources to accomplish their objectives, use resources for learning, and
organize their learning experiences around life-tasks. There have been
criticisms of this theory, many of them centered around incomplete
understanding of the nature of andragogy. Unfortunately, andragogy usually is
cited in education texts as the way adults learn. Knowles himself concedes that most of andragogy's key assumptions apply equally to adults and children.

The sole difference is that children have fewer experiences and pre-established beliefs than adults and thus have less to relate. Knowles believed that this difference alone made andragogical theory different from pedagogy (Knowles, 1980). In addition to knowing theories of adult education, understanding the characteristics, expectations, and perceptions of adult learners is very important.

**Characteristics and Needs of the Adult Learner**

**Demographic characteristics.** Adult learners are a diverse group, but they share some common backgrounds. Data from one study (Osborne, Cope, & Johnstone, 1994) of adult learners in Scotland returning to or entering college show that 60% are women, 70% are more than 30 years old, over 20% are divorced or separated, and 60% have children of pre-school or school age. Over 90% of these learners cited improvement of employment prospects, interest in a particular subject, intellectual stimulation, increased self-confidence, and making up for lost opportunities as bases for their motivation.

Only 53% listed an increase in status as a basis for their motivations. When asked about their feelings toward education during their last few years at school, 22% wanted to leave school and go to work, 22% reported enjoying school, 16% were influenced by school factors, and less than 1% reported hating school. These data imply that there are many diverse reasons that some learners leave the formal education system.
Increasingly, employers want to emphasize diversity of their employees, and use this to enhance the effectiveness of training. Among the factors affecting how well adults can learn what trainers want to teach them are age or generation, education, culture and language fluency, level and types of intelligence, physical or neurobiological disabilities, learning environment, reason for learning, beliefs and attitudes, learned strategies, personality and source of motivation, and learning style. Thus trainers, like most other adult educators have had to develop new training methods that address learner differences (Stuart, 1992).

Expectations and perceptions of adult learners. Adult learners are a diverse group of individuals in terms of talents, motivations, areas of interest and other qualities, but an accumulation of studies has shown that there are certain characteristics of the learning experience that they share and that they find more important than their traditional student counterparts. One study (Low, 1995) of adult learners at 70 four-year private colleges identified learner priorities with respect to the strength of their expectations of college (operationalized as an importance score), how satisfied the learners are that their expectations are being met (satisfaction score) and how well the institutions are meeting their overall expectations (performance gap score).

The seven factors identified as most important to these learners were: valuable content in courses in major, excellence of instruction in major field, excellent quality of instruction in most other classes, faculty are knowledgeable in their fields, ease of registration with few schedule conflicts, campus is safe
and secure for all learners, and academic advisor knows requirements in learner’s major field (American Council on Education, 1996b)

The seven factors identified as being the least satisfying for these learners were: adequacy of parking space, living conditions in rest halls, adequate selection of food available in cafeteria, number of weekend activities available for learners, residence hall staff are concerned about learners as individuals, intercollegiate athletics contribute to school spirit, and residence hall regulations are reasonable. This particular measure seems flawed because many of the items are of little relevance to most adult learners. The mean score on a 7-point likert type scale for comfortable living conditions in residence halls was 4.29 (7 = very satisfied), whereas the mean score for items important to these learners were all above 6.4 (7=very important). Therefore, the performance gap scores were also skewed. However, the data indicate that adult learners expected high levels of instructional effectiveness, safety on campus, and good academic advising. The factors for which these adult learners reported that their institution was meeting their overall expectations were library services, computer labs, well-lit and secure parking lots and adequacy of parking space. The results suggest that many of the capital intensive structures provided for youth are not important to adult learners and adults focus on factors which help or inhibit their learning.

Self-direction of adult learners. Self-direction has been defined as pursuit of independent learning, a way of organizing instruction, or a personal attribute. The common themes are the learner has some personal control over
the goals and/or management of the learning experience, though there may be differences in degrees of both. Self-directed learning should not be taken to mean fully autonomous learning, since self-direction depends on the opportunity and ability to make learning decisions (Oliver & Reeves, 1996).

Grow (1991) proposed a four-step model for teaching learners to be self-directed. His assumption was that learners could progress toward being self-directed, but merely being an adult did not guarantee the learner’s ability to take total control of his/her learning.

Cranton (1994) discusses the role that Knowles’ model of andragogy played in developing concepts of self-directed learning. She states that practitioners misinterpreted Knowles’ idea that adults prefer to be self-directed learners to mean that adult learners were self-directed; and they often designed programs that were criticized because they didn’t work. Cranton paraphrases some of Knowles’ ideas regarding how facilitators might base their practice on some assumptions about adult learning processes. These include: andragogy is an assumption; the tendency toward self-directedness is not generally transferred to educational settings by adults; and the task of the facilitator is to create educational programs and settings in which adult learners can develop their latent self-directed learning skills. Brookfield (1986) also questions the assumption that self-directedness is an innate characteristic of adulthood cultural influence (Brookfield, 1986).

**Learner’s and instructor’s roles.** Though research shows that adult learners are motivated (Fujita-Starck, 1996; Robertson, 1996) and may
participate positively and persistently (Okun et al., 1996), they often have
different needs and expectations from faculty members than other learners do
(Low, 1995).

In a review of models or theoretical bases for adult education, Buck
(1995) discusses recommendations Knowles developed for adult learners and
their instructors. Knowles recommended that learners develop their own
learning objectives through learning contracts; and determine what learning
resources and strategies, evidence of accomplishment, and criteria and means
of validation are appropriate.

The instructor's role is changed from expert in charge of dispensing
information, to learning facilitator. Knowles makes a number of
recommendations to accomplish this change instructor self-concept. in mind
set. He suggests the instructor ask him or herself the following questions: (1)
Climate setting - How can I most quickly get the learners to become acquainted
with one another as persons and as mutual resources for learning? (2)
Planning - At what points shall I decide what procedures to use, and at what
points shall I present optional procedures for them to decide about? (3)
Diagnosing needs for learning - How shall we construct a model of the
competencies this particular learning experience should be concerned with?
(4) Setting goals - How can I help them translate diagnosed needs into learning
objectives that are clear, feasible, at appropriate levels of specificity or
generality, personally meaningful, and measurable as to accomplishment? (5)
Designing a learning plan - What guidelines for designing a learning plan will I
propose? (6) Engaging in learning activities - Which learning activities shall I take responsibility for in order to meet objectives that are common to all (or most) of their learning plans, which activities should be the responsibility of subgroups, and which should be individual inquiry projects? (7) Evaluating learning outcomes - What should be my role in feeding data to the learners regarding my perceptions of the accomplishment of their learning objectives? How can I present these judgments in such a way that they will enhance rather than diminish the learners' self-concepts as self-directed persons? (Buck, 1995).

Unsurprisingly, in this conceptualization of adult learning as more learner-active and more organized around life-tasks, theories of adult education are fundamental to distance education theories.

**Distance Education Theory**

Distance education has been defined as a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction and certification of learning. (Staff, Distance Education Clearinghouse, 1997). A more narrow definition describes distance education as a variety of educational models that have in common the physical separation of the faculty member and some or all of the students. (Staff, Institute for Distance Education, 1996). This narrow definition excludes one of the earliest synchronous distance learning methods, that of an instructor traveling to a site to provide instruction (Daniel, 1996).
There are several existing theories, models, or adaptations of theories relevant to distance education. Many of these theories incorporate cognitive development theories, and developmental psychology models. All of these theories and models reflect the shift in distance education to an approach that is learner-centered, has instructor-as-mentor relationships, incorporates learner self-reliance for the educational experience, is market-oriented, requires intra-institutional collaborations, and uses technology as a flexible learning tool and communications center.

This shift has required a rethinking of teaching and learning in higher education. Distance education courses are no longer thought of as no different from traditional on-campus courses. Old goals of trying to make distance education the same as on-campus education are becoming obsolete.

**Early frameworks for distance education.** In a 1972 study, (Moore & Kearsley, 1996), researchers noted that there was no theory to account for teaching and learning in which "the teaching behaviors are executed apart from the learning behaviors." (p. 197) They emphasized the need to build a theoretical framework for distance education.

In the early 1960s, Vemer proposed a conceptual framework for classifying various components of the educational transaction. His purpose was to clear the confusion in adult education which resulted from the lack of any conceptual scheme or theoretical structure. Vemer's framework was based on methods and techniques. In this structure, methods represent the relationship of the institution to a potential body of learners. Method refers to
organizational and sociological concerns, but not the psychological construction of learning. Techniques represent the relationship that begins when an agent of the institution facilitates learning among a well-defined group of participants for a specific situation. Vemer's idea was that methods were the way organizations related to groups of people and techniques were the ways people related to information for the purpose of learning (Burnham, 1994). Vemer considered technology hardware to be devices which could enhance the effectiveness and utility of techniques, but could not function independently. The framework provides help in understanding how various parts of distance education may fit together.

Other investigators had been developing theoretical frameworks and models for distance education at the same time as Vemer. The work in the early 1960s of a group at the University of Tubingen in Germany, including Karl-Heinz Rebel, M. Delling, K. Graff, Gunther Dohmen, and Otto Peters, centered around distance education as complementary to expansion in an industrial and technological economy. Since their work was published in German, it became known to the English-speaking world through the efforts of Borje Holmberg of Sweden, Charles Wedemeyer of the University of Wisconsin at Madison, and Desmond Keegan of Australia (Moore & Kearsley, 1996).

The work of Otto Peters (cited in Moore & Kearsley, 1996) centered on his thesis that distance education allows the use of industrial methods in designing and delivering instruction. This was an organizational theory that used planning, division of labor, mass production, automation, standardization
and quality control in distance education systems. Costs were justified by perceived economies of scale. Peters' theories were not translated into English until the 1980s. The work of the University of Turingen group was criticized by some Fordism (as in Henry Ford's production line), and led to criticism of the large or open universities as offering Fordist education (Daniel, 1996).

In 1970s and early 1980s, there were other attempts to develop theories of distance education. Wedemeyer contributed the idea of the correspondence learner as free in time and place, as well as independent in directing and controlling learning. His description included an interactive relationship between learners and a tutor. Moore, influenced by the work of humanistic psychologists Buhler, Maslow, and Rogers, contributed the idea that distance might be beneficial for the independence of the learner. Malcolm Knowles' theory of andragogy, and the self-directed adult learner bringing experience to the learning task, was incorporated into the beginnings of distance education theory. Michael Moore analyzed hundreds of distance learning courses and offered his empirically-based global and descriptive theory at the 1972 conference of the International Council for Distance Education. In 1986, the theory, incorporating and refining parts of these prior frameworks, became known as the theory of transactional distance. (Daniel, 1996; Moore & Kearsley, 1996).

**Transactional distance theory.** Transactional distance theory is a pedagogical theory; it conceptualizes distance education as a teaching-learning relationship. Distance is a pedagogical phenomenon and its effects on
learners, instructors, forms of communication, interaction, instruction, curriculum and program management are essential parts of the concept of transactional distance. Distance education is the transaction consisting of the interaction between teachers and learners in environments that have the “...special characteristic of being separate from one another, and a consequent set of special teaching and learning behaviors” (Moore & Kearsley, 1996, p. 200). Transactional distance is a psychological space of potential misunderstandings between the behaviors of instructors and those of learners; and it is continuous rather than absolute. There is some transactional distance in any educational encounter, including face-to-face meetings between learners and teachers (Rumble, 1989). Instructional design and interaction methods are primary tools for overcoming transactional distance (Ehrmann, 1995; Green, 1997; Moore & Kearsley, 1996).

The physical separation of instructors and learners affects their behaviors, to the extent that special teaching and organizational responses are required; and the degree of response depends on the degree of transactional distance. In general, special teaching behaviors; such as guided dialog, course structure, and learner autonomy are major factors determining transactional distance (Holmberg & Lundberg, 1997; Moore & Kearsley, 1996).

Emerging theory. With the rapid increase in distance education programs and courses, there is a need for general core values common to all components of the distance education system. Core values can be conceptualized as guidelines, useful in planning programs and helping
organizations begin or expand distance education programs. The guidelines provide a conceptual/contextual framework on which to validate theory or build and test new theories.

The report of the American Council on Education (1996a) represents the consensus of the eighteen members of a task force assembled to establish a core of common values and create a set of consensus principles that would be useful to those involved in distance education. The report begins with the observations that the digital revolution has altered previous limitations of time and space profoundly, that learning permeates many sectors of society and these principles of good practice must not be solely applicable to higher education institutions.

Key issues were how advances in technology affect higher education and other post-secondary educational institutions, how quality can be assured in developing and delivering distance education, how distance education programs may be learner-centered, and what core values support a learning society. In a learning society, learners must take increased responsibility for control and direction of the learning process. The core values form the basis of distance learning principles, which are described as:

- Distance learning activities are designed to fit the specific context for learning.
- Distance learning opportunities are effectively supported for learners through fully accessible modes of delivery and resources.
• Distance learning initiatives must be backed by an organizational commitment to quality and effectiveness in all aspects of the learning environment.

• Distance education programs organize learning around demonstrable learning outcomes, assist the learner to achieve those outcomes, and assess learner progress by reference to these outcomes.

• The provider has a plan and infrastructure for using technology that supports its learning goals and activities.

This is only one perspective on principles for distance education, however; it incorporates several concepts included in good practices for adult learning, and for higher education.

Another program attempting to organize the range of distance education activities focuses on ensuring that technology doesn’t supersede educational effectiveness or impede equity of access. The National Learning Infrastructure Initiative (NLII) seeks to ensure that higher education’s investments and experience in national networking and telecommunications result in an educational medium in which instructional programs can maintain a high level of academic effectiveness. The NLII is both physical and organizational. The overall goal of this program is to make its resulting infrastructure or architecture as accessible and effective as educational leaders hope and as affordable as public and personal fiscal realities demand. The accessibility goal is integrally tied to the effectiveness goal. The NLII is structured to help educational institutions and instructors move toward a learner-centered approach that
provides active learning in a wide-reaching and cost-effective way. The NLII plan would undertake a range of advocacy activities and prototype developments under general guidelines. These activities or system prototypes can be tested on a pilot scale and refined before being scaled up as part of the NLII (Graves, 1994; Twigg, 1994).

Conceptual Models for Distance Learning Environments

Many distance education models are built on central components of the instructional process: presentation of content; interaction with faculty, peers, resources; practical application; assessment. Each distance education model uses technologies in various ways to address some or all of these components.

General models of the University of Maryland System. The University of Maryland System Institute for Distance Education (Staff, 1996) developed three general models of distance education for use as a conceptual planning tool. The models address both the technological and instructional needs for an effective distance education system. A full description of the models is included as Appendix A. The major concepts addressed by the models include the role and experience of the faculty, the experiences of on-site learners and off-site learners, the technologies supporting class sessions, the technologies supporting out-of-class communication, opportunities for interaction, and necessary support services. These models pertain to intra-institutional distance education; inter-institutional models are more complex and more likely to be developed as part of the NLII.
The models differ not only in the types of technologies, but also in the locus of control over the pace and place of instruction. In some models, the faculty and institution have primary control, as in a traditional classroom environment. In others, more control rests with the learner. The three University of Maryland distance education models presented do not represent all possible approaches to distance education. They represent the two ends and the middle of a continuum from faculty/institution-control to learner-control.

The Distributed Classroom Model, representative of models characterized by faculty/institutional control, uses interactive technologies. These extend the classroom-based course from one location to more locations, resulting in an extended section mixing on-site and distant learners. The faculty and learners meet in set places and times, and the number of sites varies from two to more than five. There are small numbers of learners in each location, and the experience is similar to a traditional classroom for faculty and learners.

The Independent Learning Model, representative of models characterized by learner control, frees learners from specific places and times. The usual course materials include a course guide, syllabus, and access to faculty for guidance, questions, and evaluation. Learners and instructors confer by telephone, computer conference, e-mail, and regular mail. There are no class sessions, learners study by following the syllabus. The learning content is presented through print, disk, or videotape.

The Open Learning with Class Sessions Model is representative of models characterized by shared faculty-learner-institutional control. Course
content is presented using print, disk, or videotape. The learners choose the place and time for review, alone or in groups. Periodically, the learners meet in groups for instructor-led classes. Interactive technologies are used to allow the group to discuss, clarify concepts, do group problem-solving activities, and other applied learning exercises.

Other models. Kember's Open Learning Model focuses specifically on the progress of adult learners in distance education courses. The model considers factors that affect a learner's successful completion of a distance education program, particularly the extent to which learners can integrate their study with conflicting employment, family and social commitments. Learners' entry characteristics, such as educational qualifications, family status and employment direct them toward one of two paths in a distance education course. Learners who have favorable situations tend to proceed on a positive track and succeed in integrating their conflicting commitments; while those with less favorable situations will have trouble integrating these commitments, which affects their academic achievement. There is a cost/benefit decision step in which learners decide whether to continue their studies. In validating this model, Kember found that 80% of the total variance in student completions could be explained by social integration, academic integration, external attribution, and academic incompatibility (Kember, 1989, 1995). This model is congruent with the conclusions of earlier studies. It formalizes the general trend in feedback loops representing cycles through the system.
Adult/Distance Learner Support

Andragogy regards adults as contextually based, that is, social beings who are products of history and culture. This is reflected to some extent in considerations of what is important to adult learners and distance learners. Adult learners who do not come to campus routinely need access to academic advising services. Learner contact with trained academic advisors is crucial because both the learners and the credit-granting institution need to be confident that information given to learners is appropriate and accurate. Advising can be accomplished by telephone or e-mail, or by providing periodic on-site advising at off-campus locations.

There must be easily accessible, authoritative sources of information about nonacademic matters. Adult learners should be informed as to whom to contact about specific types of questions or concerns. This is often best accomplished through printed materials that are written specifically for distance education learners.

Faculty members typically have office hours during which time they deal with questions and concerns of individual learners. A mechanism must be identified so that off-campus learners can easily contact a faculty member. Instructors might provide adult learners with their telephone number and hours during which they can be reached or with their Internet or e-mail address for individual, private discussions. In cases where there are class sessions, the faculty might designate a period of time before or after class, or during the
break, to use the telecommunications technology to discuss more general issues and concerns with off-campus adult learners.

Much of the planning for traditional course delivery assumes easy access to campus-based resources such as library holdings, science laboratories, and computer software and hardware. In distance education, it is essential that faculty and administrators work together to think creatively about how to accomplish the educational objectives when learners may not have ready access to all the campus-based resources. Solutions to particular problems may involve altered assignments, inter-institutional resource-sharing, special services at off-campus sites, and greater use of computer technologies and networks (Staff, Institute for Distance Education, 1996).

**Faculty support for adult learners.** Traditional higher education institutions have few built-in incentives to encourage the faculty to become involved in distance education activities involving adult learners. The traditional reward structure, with its emphasis on research and publication, may actually discourage faculty who might otherwise be interested. Institutions should establish some faculty incentives that recognize the additional time faculty may spend in training and in planning an effective distance education course. These reward structures are especially important for Research 1 Universities with their emphasis on publishing and research.

Adapting their courses to new modes of delivery and a different group of learners may benefit the faculty if they have access to a variety of resources. Types of support might include instructional design, video production, graphics
production, access to authoring tools, tutoring programs for re-entry students, more announcements by mail and e-mail, and other computer-based resources.

The recruitment and selection of good distance education faculty is critical to the success of the program. Faculty members who volunteer to participate in new modes of delivery are usually more successful and experience greater satisfaction than those who are assigned to participate. However, there are not always volunteers willing to teach the needed subjects. Using experienced and successful distance education faculty to recruit others is generally effective. Over time it may be possible to identify personal characteristics that are most conducive to faculty success in meeting the needs of adult learners. (Ehrmann, 1995; Staff, Institute for Distance Education, 1996).

Studies of learner characteristics and learning outcomes. A 1992 study conducted by Norland (1992) focused on the reasons adults participate in Extension Service educational programs. Five factors were related to participation: low anticipated difficulties with arrangements, high commitment to the Extension organization, anticipated positive social involvement, anticipated high quality of the information, and high internal motivation to learn. Participation outcomes fell into three categories: negative learning experiences, self-improvement outcomes, and positive social experiences. Norland concluded that people assess whether they will participate using what they know about Extension in general, and the specific learning opportunity. This study would be equally applicable to adult learners. The factors identified as
being motivators for adult participation in Extension programs are also factors important to adult learner motivation, although expectations of positive social experiences was not cited as a motivator for adult learners (Low, 1995). Robson (1997) reported on a year-long study involving an upper secondary school class in rural Australia, which was taught in a distance education mode. The classroom dynamics were analyzed in search of optimal teaching strategies. Strategies affecting interaction in the classroom, learning outcomes, and the retention rate of the class were particularly noted. The class used teleconferencing as the instructional delivery mode.

This strategy provided student access to a flexible and effective learning environment, and it supported interaction similar to that in a traditional classroom. In an analysis of teacher-learner interactions, which are spread over the class period, the teacher-speaking time was nearly three times the learner-speaking time. This was not noted as being good or bad. The investigator recommended that the ratio be narrowed through awareness of the teacher. The type of interaction between the teacher and learners was also studied, using four categories of statements, commands, yes/no questions, and other higher order interactions. There was a noted lack of interaction between learners at different schools and virtually no interaction among learners at the same site as they sat together in pairs or small groups. Students answered questions freely but asked few of their own. Questions comprised 29% of the teacher-to-learner interactions. When learners did ask questions, they were usually to clarify a point missed when they weren't paying attention or giving the
answer in question form. As time went on, the bulk of the teachers' interactions was with learners at the remote sites. Five of the eight learners initially in the on-site class eventually discontinued the class. The investigator concluded that teachers in this learning environment must adjust their teaching styles in order to encourage active learner participation.

**Learning Environments**

Ever since Malcolm Knowles introduced the concept of learning climate, adult educators have been aware of how the environment affects learning. However, returning adult learners may still find some learning environments to be inhospitable. Rather than learners trying to change who they are so that they will “fit in,” adult educators must create inclusive learning environments in which all learners can thrive (Imel, 1996).

In introducing the concept of learning environment, Knowles (1980) suggested that activities conducted prior to and during the first session could greatly affect the learning environment, including promotional materials and announcements; activities designed to assess learner needs prior to the event; physical arrangements; and the opening session, including greeting, learning activity overview, introductions, and treatment by the instructor. More recently, adult educators are recognizing that factors in the learning environment related to psychological, social, and cultural conditions also exert a powerful influence on the growth and development of learners.

Current discussions on learning environments have broadened to include the need to confront issues of sexism and racism, interlocking systems
of power and oppression, and social justice. This broader understanding of factors that affect learning is leading adult educators to consider how they can create environments that address "...issues of power that are inherent in cultural diversity, whether that diversity is based on nationality, race, class, gender, sexual orientation, disability or some other factor..." (Merriam & Brockett, 1997, p. 53).

In reference to distance education, Moore and Kearsley (1996), define a distance education system as all the processes that make up distance education, as well as the technologies and media used to deliver instruction and facilitate communications, institutional history and philosophy, and the learning environment created by all components.

Information and Instructional Technology

Many technological innovations are immediately called revolutionary and it's easy to forget that revolutions develop over a period of time. The pace of innovation in education, especially as it intersects with the technology revolution, seems to be glacial to some people, and overnight to others. The apparent discrepancy may be the result of confusing instructional technology with computers, and of equating instructional delivery technologies with distance education. Instructional delivery technologies combine many new and old technologies along with their inevitable compatibility constraints. The swift appearance of revolutionary instructional technologies is the result of the relatively simultaneous mainstreaming of personal computers, use of internet,
availability of new synchronous and asynchronous technologies, and the availability of applications (software/courseware) (Daniel, 1996; Graves, 1994).

Educational technology is not learning or education, thus; educational technology is not distance learning or distance education. The user groups, learners and instructors need to know why and how they might use emerging distance learning technologies; instructors and learners are still dubious of the benefits; and they may have different priorities among themselves and with the keepers of the technology infrastructure. It is important to consider that technology, a vital and complex instructional tool, is only part of an education system, much like other tools such as textbooks. A more important, and equally complex, part of distance or any other education is how learners and instructors interact with technologies (tools) and institutions.

**Relevance of Innovation Theory**

When new learning technologies appear in an educational institution, there are usually a few early adopters. Later the early adopters influence the hesitant and implementation grows from there until mainstream faculty, those who are not early adopters or merely hesitant, follow at a more rapid pace.

Mainstream faculty may have a variety of reasons for not being early adopters of new technologies. There are obstacles to using information technology to improve teaching and learning. Typical first educational uses of computer-related technology by mainstream faculty members include: using a computer-driven projection device as a more powerful version of an overhead projector, learning from a colleague how to use a specific application of
information technology to teach a specific topic in a specific course better than was otherwise possible, almost casually introducing electronic mail into a course as a slight enhancement to student-teacher communication, or being invited to teach a course via video telecommunications to a group of students who cannot conveniently attend classes at the main university or college campus (Gilbert, 1996a, b).

When a new learning technology emerges, early adopters use several implementation strategies to make the technology available to a wider range of users. The experience of the University of Wisconsin-Stout (UW-Stout) is typical of a technology strategy featuring a solution in search of a problem, and less typical in that it also features a problem in search of an answer (Sedlak & Cartwright, 1997). One of 13 comprehensive colleges/universities in the state public university system, UW-Stout had offered individual courses in non-traditional formats including videotape, public television, educational telephone network, correspondence, e-mail, and the Internet.

In 1994, UW-Stout decided to reconsider its distance education programs because: the university decided to join a consortium to launch a regional interactive television network, new markets were identified in a new enrollment-management system, there was a growing interest in using distance education to provide statewide access to programs, additional alternatives for distance education emerged, and UW-Stout was authorized in 1988 to offer a statewide degree program in Industrial Technology, but lacked the resources.
They decided to deliver the Industrial Technology degree program throughout the state using the interactive television network (a solution in search of a problem). In this case, the technology came first. Once the university decided to enter the two-way television consortium, it felt compelled to offer a degree program to make its investment in the consortium a wise one.

The university also decided to deliver courses in hospitality management asynchronously using Lotus Notes™ as a platform for campus networks or the Internet (a problem in search of a solution). The Department of Hospitality and Tourism had been looking for a way to make its courses less time- and place-dependent in order to expand its pool of potential students. The Lotus Notes™ system was a solution to its problem (Sedlak & Cartwright, 1997).

Distance learning systems employ a variety of communication technologies. The technologies employed by a particular distance learning system have a direct impact on the number of sites supported, instructional media supported, nature of the interaction, level of quality, whether the system is private or public, security and confidentiality.

Some of the technologies and systems that are typically used for video-based distance learning applications include broadcast TV, instructional television, broadband cable, microwave, satellite, private fiber, public telephone service, and the Internet. A combination of technologies is often used to enhance the interaction. These include satellite-based distance learning, site-to-site and multipoint videoconferencing, broadband cable/fiber
networks, and workstation-based conferencing (Bray, Dean, Dershimer, DiGuisepppe, Laxton, Leifer, & Saunders, 1995; Trout-Bayard, 1997).

Michigan is a leading state for early adoption of new technologies. Most of the colleges and universities in Michigan have satellite downlink capability and specially designed classrooms for receiving satellite-based distance learning programs. Only the major universities in Michigan, including the University of Michigan (U-M), have uplink capability and specially equipped studio classrooms that can be used as originating sites for satellite-based distance learning programs. There are about twenty educational institutions in Michigan, including U-M, that have classrooms equipped for distance learning using videoconferencing technology. There are Multipoint Control Unit (MCU) configurations that can support over 30 sites simultaneously; in practice, 3 to 8 sites would be typical. An MCU is a device that bridges together multiple inputs so that more than three parties can participate in a video conference. Currently, there is one MCU in Michigan which is owned and operated by Central Michigan University; and is primarily being used for Central Michigan University programs. However, any of the approximately twenty sites in Michigan with videoconferencing systems are potentially capable of accessing and using that MCU via the public switched digital services network (Bray, et al., 1995).

Equivalency of Traditional and Distance Learning Environments

There is an ongoing debate on the equivalency of traditional classes and those using educational technology, but upon further reading, it appears that there is not so much a debate over equivalency as there is a difference in terms

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and a need to describe target populations clearly. One of the original goals of using educational technology was to provide wider access to instruction that was as good as traditional classroom instruction or did no harm. One set of research outcomes concluded that there is no significant difference between educational outcomes attained using educational technology and those attained in a traditional classroom, and another set reached the opposite conclusion (Orr, 1997; Russell, 1996).

Russell (1997) tries to explain the difference: "Technology is not neutral, despite the fact that study after study has concluded that using it in the classroom neither improves nor diminishes instruction for the masses. The truth lies in the fact...that students are not alike. Individual differences in learning styles dictate that technology will facilitate learning in some, but will probably inhibit learning in others, while the remainder experience no significant difference. Therefore, when lumping all students together into a fictional 'mass,' those who benefit from the technology are balanced by those who suffer. When combined with the no-significant-difference majority, the conglomerate yields the widely reported 'no significant difference' results." (p.1)

It appears that the results of comparative studies depend on the target population, extraneous variables, operational definitions of success, sensitivity of measuring instruments, and obtaining a complete frame. In differentiating among people in their student population, educators should evaluate students' learning types when possible, and match the technology used in their instruction accordingly. A multi-technology approach to teaching must consider
groups of individuals and their methodological needs, and revisit many of the older technologies such as radio, television, and videotapes to ascertain their viability for specific student populations. In the rush to implement new and exciting technologies, there has been a tendency to ignore the techniques pioneered by the earliest distance learning practitioners. In fact, there will likely always be a substantial number who can benefit from the earlier tools (McCarthy, 1990; Russell, 1997).

Until any of the old or new technologies can prove their superiority through comparative research, it is more useful to consider other factors, such as student preferences, access, and cost as the principal criteria of success. The ideal distance education program would offer each course through a variety of equally effective methods. Continual emphasis on student and instructor diversity must be the basis for evaluating new technology, rather than hailing each new distance education technology as a boon to improving instruction. At that point, focus should shift to the unique qualities of emerging technologies, and their potential to resolve problems such as cost, access, individual differences, productivity, and faculty resistance (Gilbert, 1996a; Owston, 1997; Russell, 1997).

**Current Status of Distance Education**

In 1994, the U.S. Department of Education, through the National Center for Education Statistics (NCES), commissioned a survey of distance education courses; the survey was designed to provide the first nationally representative
data about distance education course offerings in higher education institutions. The report from that survey includes information about: institutions that currently offer or plan to offer distance education courses in the next three years, the types of instructional delivery technologies used, receiving sites for these courses, learner enrollments, characteristics of distance education courses, program goals, future plans, and factors keeping institutions from starting or expanding their distance education offerings (U.S. Department of Education, 1997).

The NCES survey defined distance education as education or training courses delivered to remote (off-campus) locations via audio, video, or computer technologies. Data were collected in fall 1995 from 1,274 two-year and four-year higher education institutions in all 50 states (and the District of Colombia and Puerto Rico) and were weighted to provide national estimates. These institutions represent the approximately 3,460 two-year and four-year (including graduate-level) higher education institutions. In this study, the following types of courses were not included: (1) courses conducted exclusively on campus, although some on-campus instruction might be involved in the courses that were included; (2) courses conducted exclusively via correspondence, although some instruction might be conducted through correspondence in the courses that were included; and (3) courses in which the instructor traveled to a remote site to deliver instruction in person. Institutions that offered any distance education courses in fall 1995 were asked how many students were formally enrolled in the institution's distance education
courses in academic year 1994-95. Public institutions offered distance education courses much more frequently than did private institutions, as shown in Table 1.

Table 1

Institutions Currently Offering Distance Education (DE) Courses

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>Public</th>
<th>Private</th>
<th>All institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-year</td>
<td>4-year</td>
<td>2-year</td>
</tr>
<tr>
<td>Number of institutions</td>
<td>960</td>
<td>610</td>
<td>380</td>
</tr>
<tr>
<td>Number of institutions offering DE courses</td>
<td>560</td>
<td>380</td>
<td>10</td>
</tr>
<tr>
<td>Institutions offering DE courses in 1995</td>
<td>56%</td>
<td>62%</td>
<td>2%</td>
</tr>
<tr>
<td>Percent of total students in DE courses</td>
<td>39%</td>
<td>45%</td>
<td>&lt; 1%</td>
</tr>
</tbody>
</table>

Note. From U.S. Department of Education (1997). Total student population for this study was 753,640. Data are from 50 states, the District of Columbia and Puerto Rico. DE = Distance Education

*National estimate from sample population. Percentages may not sum to 100% due to rounding.

It is useful to put the enrollment numbers for distance education courses into context; there were approximately 14.3 million students enrolled in all higher education institutions in fall 1994 (U.S. Department of Education, 1996). Public two-year and four-year institutions enrolled the most distance education students. About half of the institutions that offered any distance education
courses in fall, 1995, enrolled 200 or fewer students in those courses, with 23% enrolling from 1-50 students, and 24% enrolling from 51-200 students. Only 22% of the institutions enrolled more than 800 students in distance education courses. These results are one point which institutions can use in developing policies and program plans. It is also useful to consider other institutions' plans for future development.

Among institutions that offered distance education courses in Fall, 1995, and those planning to offer such courses in the next three years, approximately half plan to begin offering or increase their offerings of distance education courses to most types of remote sites (see Table 2). Almost three-quarters of institutions plan to initiate or increase their use of two-way interactive video, two-way online, computer-based, interactions during instruction (includes use of the Internet); and other computer-based instructional delivery technologies and systems.

All institutions, including those with no future plans to offer distance education courses, reported the factors preventing initiation or expansion plans. The factors these institutions reported most frequently reported as major barriers to further development or start-up of distance education course offerings were: program development costs (43%), limited technological infrastructure and the resources to support distance education (31%), and equipment failures at all levels of complexity, and costs of maintaining equipment (23%).
Table 2

Plans to Offer Distance Education Courses and Characteristics of Courses

<table>
<thead>
<tr>
<th>Query</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responses of public &amp; private 2-year &amp; 4-year institutions, when asked about plans to offer 1994-1995 distance education courses</td>
<td></td>
</tr>
<tr>
<td>• Do not plan to offer DE courses in next 3 years</td>
<td>42%</td>
</tr>
<tr>
<td>• Plan to offer DE courses in next 3 years</td>
<td>25%</td>
</tr>
<tr>
<td>• Offered DE courses, Fall, 1995 (1130 institutions)</td>
<td>33%</td>
</tr>
<tr>
<td>For institutions offering DE courses in Fall, 1995: Who were your course suppliers?</td>
<td></td>
</tr>
<tr>
<td>• Institution's subject area departments</td>
<td>75%</td>
</tr>
<tr>
<td>• Commercial/non-commercial vendors</td>
<td>30%</td>
</tr>
<tr>
<td>What types of instructional delivery technologies were used?</td>
<td></td>
</tr>
<tr>
<td>• Two-way interactive video</td>
<td>57%</td>
</tr>
<tr>
<td>• One-way prerecorded video</td>
<td>52%</td>
</tr>
<tr>
<td>• Two-way audio with one-way video</td>
<td>25%</td>
</tr>
<tr>
<td>• Computer based, with no synchronous online interactions</td>
<td>25%</td>
</tr>
<tr>
<td>What are your primary receiver sites for distance education courses?</td>
<td></td>
</tr>
<tr>
<td>• Students’ homes</td>
<td>49%</td>
</tr>
<tr>
<td>• Other branches of their institution</td>
<td>39%</td>
</tr>
<tr>
<td>• Elementary/secondary schools</td>
<td>35%</td>
</tr>
<tr>
<td>What is your primary target audience?</td>
<td></td>
</tr>
<tr>
<td>• Undergraduate students</td>
<td>81%</td>
</tr>
<tr>
<td>• Graduate students</td>
<td>34%</td>
</tr>
<tr>
<td>• Continuing education for professionals</td>
<td>13%</td>
</tr>
<tr>
<td>• Professionals seeking recertification</td>
<td>39%</td>
</tr>
<tr>
<td>• Other workers (skills updating or retraining)</td>
<td>49%</td>
</tr>
</tbody>
</table>

Note. From U.S. Dept. of Education (1997), Table 16.
### Table 3

**Institutional Goals for Distance Education Programs**

<table>
<thead>
<tr>
<th>Institutional goals</th>
<th>Rating of goal</th>
<th>Progress toward goal goal met to:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>very important</td>
<td>somewhat important</td>
</tr>
<tr>
<td>Make courses available at convenient locations</td>
<td>82%</td>
<td>13%</td>
</tr>
<tr>
<td>Reduce time constraints</td>
<td>63%</td>
<td>27%</td>
</tr>
<tr>
<td>Increase institution's access to new audiences</td>
<td>64%</td>
<td>33%</td>
</tr>
<tr>
<td>Increase enrollments</td>
<td>54%</td>
<td>37%</td>
</tr>
<tr>
<td>Make education more affordable</td>
<td>49%</td>
<td>34%</td>
</tr>
<tr>
<td>Reduce institution's per-student cost</td>
<td>20%</td>
<td>51%</td>
</tr>
<tr>
<td>Improve course quality</td>
<td>46%</td>
<td>39%</td>
</tr>
<tr>
<td>Meet employer needs</td>
<td>38%</td>
<td>43%</td>
</tr>
</tbody>
</table>


Increasing student access was an important goal for most distance education programs. Goals concerning increasing the institution's audiences and enrollments were also perceived as quite important (Table 3). Goals particularly likely to be met to a major extent concerned student access. In general, institutions that perceived a particular goal as very important more frequently indicated that the goal had been met to a moderate or major extent, while institutions that perceived a goal as somewhat important more frequently
indicated that the goal had been met to a minor extent. In general, institutions indicated that most of the goals were met to a minor or moderate extent. There are institutions whose goals included offering degrees exclusively through distance learning, and some of them have carried the planning process through to the point that they offer such degrees.

There were an estimated 690 degrees and 170 certificates offered in Fall 1995 that students could receive by taking distance education courses exclusively. Most institutions that offered degrees or certificates exclusively by distance education only offered a few of them: 44% of institutions offering such degrees offered only one degree, and 61% of institutions offering such certificates offered only one certificate. Almost half of the institutions that offered degrees that students could complete by distance education courses exclusively had ten or fewer degree recipients in academic year 1994-95.

An estimated 3,430 students received degrees and 1,970 received certificates in 1994-95 by taking distance education courses exclusively. To put these numbers into context, there were approximately 2.2 million degrees awarded at the associate through doctorate level and approximately 72,000 less-than-one-year awards in 1992-93 (U.S. Department of Education, 1996).

Telecourses were included in the NCES Survey covering the 1994-1995 academic year and in the Department of Education statistics for 1992-1993. There have been studies that more explicitly target learners who take telecourses. The telecourse learner is usually older than traditional learners (half are over 35), two-thirds are female, more than half are married and have

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at least one dependent, three-fourths are degree-seeking learners; and over 90% are employed, full or part-time, outside the home. These characteristics are not atypical for adult learners, but it is certainly necessary to provide education programs that are primarily time and place insensitive. In the typical telecourse class, 20% of learners have never been to college and more than half are concurrently taking on-campus courses. The enrollment pattern may indicate that telecourses help build enrollments while accelerating the degree progress (Levine, Gallagher, Boccutti, & Meyer, 1992).

In the continuum of technological complexity of educational media, television may be viewed as an 'old' delivery system when compared with two-way synchronous interactive desktop computer networks such as the CU-See Me system at Cornell University (Noon, 1994). The instructional delivery medium that introduced Sesame Street to early childhood education in the late 1960s is still widely used in the classroom and also by learners who need a time/place insensitive mode of education. A classroom study of middle and high school learners indicated that the more learners prefer an educational medium such as television, the more they expect to learn from it. The learners' perceptions were related to their teachers' teaching styles and attitudes toward educational media. Students' grades were positively correlated with their expectations of learning from their teachers. The study further concluded that age, academic setting and cultural differences are essential factors in interpreting and assessing reports of outcomes of learning and learning systems (Saga, 1993).
In recent years, 60 community colleges have joined with 22 public television stations around the country to offer more Associate’s degree programs through distance education telecourses under a program called Going the Distance (American Council on Education, 1994; Levine et al., 1992). This program is part of an initiative of the Public Broadcasting Service (PBS) aimed at expanding career opportunities for working adults and increasing workforce competitiveness through adult education services. Going the Distance (GTD) focuses on reaching students who could not otherwise attend college and work toward a degree.

In a study of the GTD Program conducted by the Penn State American Center for the Study of Distance Education, investigators used on-site and telephone interviews to determine whether the GTD Program led to the development of more Associate’s degree programs using distance learning courses exclusively (Isnor, 1997a, b). The potential impact of offering degrees for distance learners was seen in the 100-300% increase in learner enrollments for telecourses at many colleges offering the GTD Program. Other findings included that the leadership of the college president is a major factor in determining the success of distance education degree programs, colleges neither marketed nor publicized the GTD Program, internally or externally.

PBS has offered telecourses through PBS stations and local colleges since 1981, but until the GTD Program started, students could not completely fulfill degree requirements through telecourses. In the early 1980s, interest in telecourses increased, with the creation of the PBS Adult Learning Service and
the establishment of the CPB/Annenberg Project. The Project funded professional quality, academically sound, telecourses for national distribution. Enrollment in PBS telecourses has grown from 55,000 in 1981 to about 2 million in 1992 (Isnor, 1997b). As telecourse enrollments increase, there is more interaction among broadcasters, instructors, and institutions.

In a global survey, Tiene (1996), asked television broadcast professionals to identify the most critical issues facing educational television in the 1990s. Some of the results were not surprising. The top response was obtaining sufficient funds for ongoing operations (66% of respondents), followed by the need for more and better trained staff (52%), better teacher training in the use of instructional television (41%), insufficient number of videocassette recorders in schools (39%), and insufficient number of televisions in the schools (38%). The teacher training issue was seen as especially important because if teachers don't consider television to be a valuable source of information, they are unlikely to use it. If they use television, but are not sure how to incorporate television material into the regular curriculum, potential gains from using television may be lost. The respondents were also asked to briefly describe solutions to the most significant problems they identified in the survey. Approximately 30% of respondents supplied written suggestions. Though insufficient equipment in the schools was identified as a significant problem, less than a third of the respondents mentioned equipment as a solution. The rest of the respondents commented on the importance of the
teacher as a facilitator for instructional television programs and how to provide training for teachers in the use of this instructional medium.

Television instruction can be used in a variety of ways. Reichl (1995) reported on the use of tutored video instruction (TVI); a method developed by Stanford University in the 1970s. TVI fosters and supports interaction by providing a tutor who acts as a catalyst between the individual learners, the other learning materials and the instructor. One application of TVI is worksite instruction. Groups of 3-10 students meet with a company-assigned tutor to study a relevant topic. The students view an unedited classroom lecture on videotape. They have the same textbooks, assignments, and additional learning material as the on-campus students. The tutor organizes the study process by use of the videotape and presents some of the subject content. The tutor stops the videotape to elicit class discussion and group learning. This intensive learning model provides universities and companies with a cost effective way of learning. The TVI model can be extended to use other media, such as computer aided instruction or work with individual students. The model has constraints, such as availability of a qualified tutor and day-to-day interaction among tutors and learners, but in learning environments that support TVI, it can be a valuable part of the distance education system.

Institutional Climate and Policies

Accommodating Traditional and Non-traditional Learners

Institutional climate is part of the learning environment. Part of the institutional climate is the manner in which an institution plans to accommodate
different kinds of learners. In the case of instructional design, the assumptions of the andragogical model of adult education are important. These assumptions may be true to different degrees for individual learners, and this caveat must be considered in instructional design.

In designing instruction for adult learners, basic principles of instructional design are essential. A few design principles that would be routinely part of good practice in adult education include consideration of teaching and learning styles (Dunn, 1990; Marshall, 1991; McCarthy, 1990; Stuart, 1992), developing goals and objectives, assessing learner needs, developing and planning course content, assessment tools, diversity of learners, delivery methods (Chickering & Ehrmann, 1996; Henderson, 1996; Signer, 1992), types of activities, class size, and many others. All of these design principles need to be considered under the umbrella of learning contexts and functions of adult education.

Learning contexts and the functions of adult education are appropriately, though not exclusively, handled at the institutional or systems level. In this sense, learning contexts for adult learners may be defined as how the education transaction is viewed by the institution and the community it serves. Adult education functions (activities) of whole programs or specific learning transactions are then considered in the contexts of the intra-university environment and the status of the university in the larger community.

Context and function seem directly relevant in planning, marketing and funding. They are essential for good instructional design. It may not be
immediately clear that upper administrations at higher education institutions, who must provide support for program development, must also be actively involved in developing overall guidelines for instructional design. One place where learning contexts, instructional design, and consideration of institutional climate all meet is in promoting and preserving the mission of the university.

Intra-institutional collaborations that may be part of community outreach programs are increasingly common at this institution. Collaborations and community outreach are natural and strong parts of land grant institutions. Collaborations with emerging industries that capitalize products or services originated by research faculty at the institution are a smaller part of the mission of a Research 1 University. In either case, the institution has a strong interest in nurturing appropriate collaborations, including those among individuals in different divisions. The institution must also decide the status of adult education and its overall importance in promoting the institutional mission(s).

For example, if the Division of Continuing Education and the Horticulture Department decided to collaborate in producing a pilot telecourse of a popular course in urban gardening, the intersections of context and function of adult education are important. The questions to be asked at the design stage include:

- what other groups or departments within LSU can be cultivated to enhance the course (status of this educational transaction within this institution);
- is the proposed course a wise investment in an adult education program (status of adult education programs within the institution);
- will a telecourse on urban gardening be useful and well-attended by adult learners in the area (status of this educational transaction in the wider community); and

- will a telecourse on urban gardening promote or trivialize our overall adult education programs in the community (status of institution's adult education programs in the wider community)?

Table 4

**Contexts for Adult Education Programs and Activities**

<table>
<thead>
<tr>
<th></th>
<th>Sponsoring organization (immediate context)</th>
<th>Community (larger context)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
<td>status of the program in the sponsoring organization</td>
<td>status of the adult education program in the community</td>
</tr>
<tr>
<td>Specific learning activity</td>
<td>status of the specific learning activity in the sponsoring organization</td>
<td>status of the specific learning activity in the community</td>
</tr>
</tbody>
</table>

Most of these questions are appropriately answered at the institutional level. The intersections of institutional context and function of adult education are summarized in Table 4 (from Dean, 1994, p. 63).

Another way to accommodate both traditional and non-traditional learners, regardless of instructional delivery method, is to modularize instruction and learning to increase flexibility. A new learning infrastructure should offer information to learners in a flexible, modular form. Flexible subject modules and tools can be assembled into educational programs and courses to meet individual needs and the unique standards of particular educational institutions.

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The emphasis should be on meeting standards, rather than on credit hours, final exams, class schedules, and other artifacts. The ‘artifacts’ have been standards in the process of balancing faculty judgment about the nature of "an education" and the economic needs of educational institutions (Dunn, 1990; Graves, 1994; Holmberg & Lundberg, 1997; Johnstone & Krauth, 1996; McCarthy, 1990).

Since institutional climate is an integral part of the overall learning environment, it is appropriate that priorities should be articulated at the institutional level in order to guide departments in deciding the importance of increased flexibility, the relative importance of non-traditional learners to the institution’s mission, how modularized instruction affects curriculum and costs.

Flexibility is a major asset of information technology and modular instruction may help the institution to promote its mission(s). Learners' schedules and learning styles may not match institutional schedules and instructors' teaching styles, and time may be wasted covering topics already mastered in previous course work. Family commitments, physical challenges, or full-time employment may impede learners' access to today's mainstream learning infrastructure, the university or college.

**Strategic Institutional Planning for Distance Education Systems**

The distance education revolution seems to have ‘arrived,’ but is still in its infancy. Turn-key courseware and software are readily available and many institutions have the newer or more complex technologies. Many potential learners either own or have access to personal computers; many are hooked to
the Internet or have access to it. There are numerous articles in the popular press about the Virtual University. There is also an expanding body of literature about good teaching practices for distance education. The problems of interconnection of multiple technologies are just beginning to be resolved. In short, distance education will become mainstream when cohesive distance education systems are developed. (Alley, 1996; Bell & Elmquist, 1992; Gilbert, 1996b; Owston, 1997; Rippa, 1992).

Several universities and commercial institutions have emerged as leaders in the distance education community. But for distance education to become mainstream, the needs, expertise and concerns of both instructors and adult learners need to be considered as part of a formal planning process (Dill, 1996). Successful comprehensive planning processes used at institutions such as Michigan State University, the University of Minnesota and Stanford University include: clarifying and articulating norms to legitimize planning efforts, grouping and consolidating functions, promoting reciprocal communication, encouraging each strategic unit to develop an ongoing planning capacity, and increasing direct sharing of information among members of the academic community. Dill (1996) identifies reasons for ineffective design of planning processes at universities: the informal growth management process used when resources were more abundant, allowing narrow self-interests to overcome community interests, insensitivity to the governance traditions of the institution(s), and disregard for the institutional decision making processes which have evolved over the years. (p. 137)
Much of the distance learning / WWW debate is played out in the economic arena, with state legislatures and governors. University trustees are focusing on how they can get the biggest educational bang for the buck. There are also fears that other universities offering distance learning/Web courses/degrees or programs might lure their students away. Courses without such things as buildings, heat, and other utilities make a lot of economic sense, both to prospective students and to the schools that offer them. This kind of thinking is driving university agendas and the bottom line can come down to "Embrace distance learning," or face eminent downsizing or even closing (Kaplan, 1997).

If the prototypes for new learning environments are to succeed, they must demonstrate their efficiency and effectiveness. A measure of educational effectiveness is the ratio of educational outcome to cost. Prototypes should plan to incorporate such measures and, when possible, compare them to their traditional counterparts. This may be a problem as these ratios are notoriously subjective and hard to standardize. (Graves, 1994; Hoachlander, 1991; Zumeta, 1996). Measuring the effectiveness and extent of use of new learning infrastructures, while equally complex, may be easier to achieve than measuring cost effectiveness.

Implementing new learning infrastructures must be preceded by research that compares the results of prototype work to standard educational results. This may not be possible in cases when the subject matter or ways of knowing it or testing it are radically altered by technology. When possible, the
educational effectiveness of new learning environments should be compared with that of traditional counterparts. Prototype learning environments should include plans for diffusion and should reflect knowledge of the literature on the diffusion of technology, especially of technology-mediated learning materials. In assessing the new learning environments, there are also opportunities to assess the cognitive flexibility of prototypes (Graves, 1994).

Collaborations in Planning Course and Degree Development

One of the first well-known efforts at school-university collaborations began in the late 19th century, when a committee chaired by Charles Eliot, president of Harvard University, explored goals for these associations. This committee became known as the Committee of Ten, and it issued its recommendations in 1892 which included: a conference of school and college teachers of each principal subject taught in secondary schools' programs; consideration of each subject and the best methods of instruction for it, allocation of time for the subject, and the best methods of testing the pupils' performance in each subject (Cohen, 1974).

Institutional polices can discourage or encourage collaborative efforts in course planning, and also the incentive for successful course or program developers to train their peers. In this situation, institutional climate is a strong component of the learning environment because institutional policies directly affect faculty participation, especially participation by research faculty. In a study of institutional incentives and rewards for faculty involved in distance learning, Wolcott and Haderlie (1995) concluded that the majority (57%) of the
forty-five institutions studied used stipends or extra compensation as incentives for faculty participation. Almost half of the respondents were university administrators and a quarter were distance education program administrators. One respondent was a faculty member. This may complicate extrapolation of the study results.

For full-time, tenure track faculty, distance teaching was generally considered to be part of their workload. The institutional incentives for these faculty members included extra travel, release time, grants for materials and expenses, and modified teaching assignments. Other incentives were also extrinsic, including provision of training seminars, instructional materials production services and mentoring for faculty new to distance learning. In fifteen cases, instructors had a grader or teaching assistant for distance learning courses. The respondents noted other extrinsic motivators such as departmental commitment and the involvement of the institution's president.

The investigators concluded that faculty were motivated to participate when distance teaching was part of their normal course load or when they received adequate compensation. Disincentives included lack of central support, lack of adequate compensation and recognition for their effort, and negative attitudes of other faculty. The investigators recommended that in order to capitalize on intrinsic motivations of faculty, support services and personnel must be provided. Lack of support services was also cited as a detriment to a quality learning experience for learners enrolled in courses offered in distance learning environments.

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In a previously discussed report on new distance learning experiences at the University of Wisconsin at Stout, conclusions were presented at the end of three years of experience. The conclusions concerning broad-based planning for degrees/courses offered and delivered through an interactive television consortium were: it is easy to underestimate the time and people costs involved when several campuses from two different systems are involved; it is important to look at the successes and failures of other institutions; distance education projects fail probably more from a lack of thorough planning than anything inherent in the delivery system; consideration of student needs that may be different from those of traditional students must be considered; and faculty innovations should be accommodated whenever possible to encourage more faculty involvement (Sedlak & Cartwright, 1997).

Within and among academic institutions, planning and program development training is too important to be the exclusive responsibility of education departments and technology support divisions. If small-scale program planning and course/degree development training are truly collaborative, cross-training occurs. All partners have an interest in testing the value of these collaborations for their own missions, possibly through a pilot course or courses.

It may be a non-education academic instructor who proves to be a talented trainer and course developer interested in training others; or it might be a curriculum professor who develops a useful and insightful way to use the Internet interactively to demonstrate avian physiology. The point is that the
focused and short-term nature of the project allows these developments to emerge and gives ownership of results to the project participants.

Though it may be argued that the limited project scale of a pilot course wastes time and resources, it may be possible to conduct two or three of these pilots simultaneously and use faculty members particularly interested in different course delivery methods. Additionally, the impact of this approach may be more powerful than it would seem at the start. Recommendations from studies and projects at other institutions caution that large initial programs tend to be too unwieldy to be practical or successful. Some institutions report that results from small-scale projects soon become known and pull in new collaborations. The results may also show the institution how to implement formal training in the use of educational technologies. (Lyons & Washburn, 1995; McRoberts, et al., 1995).

Pilot programs are not intended to bypass institutional administrators. Once small-scale mutually beneficial collaborations develop, the results give the institution's administration a basis for judging their worth or justifying their costs. Successful collaborations engender mutual respect among partners and may encourage it among departments. It is essential to develop some cohesion within an institution before engaging in similar activities with other institutions (Burnham, 1994; Massy & Zemsky, 1995; Sedlak & Cartwright, 1997).

In order for larger partnerships or consortia to be successful, all institutional partners must be active in planning, focusing, implementing, evaluating and constantly reevaluating the partnership. The partners cannot
afford to ignore the scopes, goals, achievements, outcomes and duration of past partnerships. Focus is particularly important because there are so many different types of partners and partnerships. Potential partners can maximize their chances for successful collaboration by formally addressing current and past initiatives and explicitly communicating partnership parameters (Anderson & Harris, 1997).

Target National Educational and Economic Problems

Information technology is an amplifier of human capacity and ability. It is not a solution to all of education’s problems. It cannot replace the faculty, the educational institution, or the publisher. Information technology can be used to provide learner and mentor with the latest tools of the trade for advancing the subject and solving problems. However the need for in-depth contact between subject experts and a small group of learners is likely to remain an essential feature of this kind of learning. The small group learning together, assisted by information technologies, is at the heart of our national reputation in higher education and the resulting Research and Development activities it engenders. Information technology can assist in disseminating the body of knowledge necessary for participating in upper-level small-group learning. In this respect, using information technology can promote the missions of Research 1 universities.

An important problem confronting a national learning infrastructure is that of trying to assemble universally compatible hardware and software while developing its potential as sort of an all-inclusive modular degree granting
Discussions of universal compatibility can be viewed as veiled proposals for a franchise model of higher education, in which faculty will have initial roles as content experts and will then become mentors and motivators. The idea of universal software/hardware seems comprehensive and convenient in the long run, but it lacks easily accessible platforms for instructor and student creativity.

The following discussion outlines one plan for the ultimate university and some of the strengths and weaknesses of such an institution. These enterprises are not in the distant future, they are here. The debate is useful because it ensures that individual institutions and their learners will have options other than buying a complete franchise (Alley, 1996; Graves, 1994).

There is a growing belief that current instructional models emphasize teaching at the expense of learning. As a result, providers have developed educational software that promotes learning by doing at the expense of assimilating experiences into deeper knowledge. Educational innovations such as these, which are based on behaviorist models of learning, are not leading to systemic change. They are difficult to sustain and to transfer to other settings. The behaviorist or formative approach ignores the experience of the adult learner, central to any concept of andragogy. The experiential educational software packages are being implemented at additional recurring costs at a time when education is expected to be openly accountable for the costs and outcomes of instruction. The problem of learning effectiveness provides the higher education community an opportunity to justify the results of its
intellectual and financial investments in the growing interconnected networks, collectively known as the Internet. The Internet may be education's best lever for initiating affordable, systemic instructional shifts that de-emphasize time and place and emphasize outcomes, i.e., learning (Ehrmann, 1995; Graves, 1994; Reichl, 1995).

Internet experience has shown that standards are the key to affordability, widening scope, and diffusion. Faculty knowledge and know-how can be integrated into major education programs for the nation's information highway. New programs may provide accessible and affordable learning opportunities responsive to new fiscal realities and the growing numbers of lifelong learners. (Aurand, 1994; Dill, 1996; Graves, 1994;).

One way to begin implementing new partnerships is to involve educational institutions and organizations as pilot facilities. Prototypes are more likely to diffuse if they have been through the difficult process of inter-institutional testing. Colleges and universities can participate in prototypes and provide resources to serve their interests and the common good in several ways. For example, they can provide selected faculty members (1) release time from other duties to participate in prototype activities, (2) related travel support, and (3) technical or departmental support required to evaluate testing and learning materials from many perspectives. They also can provide resources for technological and informational architecture. A clearer definition of 'providing resources' will help these prototypes diffuse (Massy & Zemsky, 1995).
In addressing national educational problems, it is essential to enlist leadership for change. The NLII must enlist the active support of those educational leaders who understand the role that information technology can play in increasing an institution's productivity by facilitating new approaches to instruction. As long as the lecture provides the main teaching method for students, growth in productivity will require larger class sizes or heavier faculty teaching loads. Neither of those offers real solutions, and both would squander education's most critical asset and intellectual capital, the faculty.

Decision makers from leading colleges and universities and from academic organizations will have to collaborate in order to advance the case for a national learning infrastructure. Without such leadership, the infrastructure for effective learning and efficient instruction cannot evolve (Denning, 1996; Graves, 1994; Massy & Zemsky, 1995).

Maintaining Access, Accreditation and Academic Quality

A recent study (McWhirter, 1997) of perceived barriers in education and career choices was based on the consistent observations of vocational researchers studying the career development of women and people of different ethnicities and the strong influence of these barriers. This study involved 1139 junior and senior high school students from nine high schools in the southwestern U.S. Students were male and female self-identified Mexican Americans and Caucasians. The perceived barriers included future job discrimination, ethnic discrimination, perceived barriers to attending college, perceived barriers during college, and general perceptions of barriers. The
results of the study revealed significant ethnic and gender differences with no interaction effects. Female students were more likely to anticipate sex discrimination and less likely to anticipate ethnic discrimination than their male counterparts. Male students were more likely to anticipate ethnic discrimination than female students.

Female students were more likely than males to agree that if they did not go to college, it would be because of a lack of interest and the belief that it would not help their future. Ethnic differences in perceptions were not simply the result of socioeconomic status differences in this study. Mexican-Americans were more likely to anticipate both gender and ethnic discrimination in their jobs than were Caucasians and were also less likely to believe that they could overcome these barriers. Ethnic differences in perceived barriers to education were chiefly that Mexican-Americans were more likely than Caucasians to cite family issues such as family problems and negative attitudes of family members as barriers to going to college. They were more likely than Caucasians to believe that they were not smart enough to go to college (McWhirter, 1997).

Recommendations included that enhancing the perceived value and relevance of college for high school females might increase their educational attainment. Additionally the author suggests that student exploration of perceived family attitudes and other family-related concerns may be an essential component of vocational planning and counseling for Mexican-American youth. It may also be useful to study different forms of distance education.
learning in these same contexts. Some interactive technology-driven programs may be useful to expose students to a larger and more diverse peer group, while asynchronous technology-driven programs may be useful in providing privacy for students in learning about and discussing education and career choices. There is a continuing need to accommodate learners who have limited access to technologies.

In areas of academic accreditation and quality, institutions must again balance priorities for new learning environments with promoting their missions and institutional goals. The University of Wisconsin experience suggests that an institution must balance enrollment stability with flexibility to offer single courses or multi-course certificate programs as the need arises. Offering individual, unrelated courses not connected to a degree or offering courses strictly for professional development is a risky business. The expense of operating an interactive television system requires some predictability in course enrollments, and total degree programs can guarantee enrollment stability and cost effectiveness if chosen carefully. Certain single courses are important and can be offered. Wisconsin's strategy is to offer total degree programs for a majority of available time slots, and to offer single courses that are required for a number of different degree programs. Results of programs at the University of Houston and marketing studies done for the LSU Evening School suggest a similar strategy (Grady, 1995; Mathews, 1996; Sedlak & Cartwright, 1997).

A major educational task of the 1990s is making sure that 13-15 years invested in school provides dividends for individuals and communities.
Predictions of labor shortages as the baby boom ages and the baby bust moves through the educational system are based on number of workers available and what skills the workers need. As technology progresses, it becomes increasingly difficult for employers to predict what they will need in terms of specific jobs. Thus, industry values workers who are flexible, easy to train, possess critical thinking skills, able to work in groups, are good communicators, and familiar with basic technology (Kolde, 1991; Lerche, 1989; Vaughan, 1991). A worker who does not have the "new" basic skills is not as likely to receive specialized on-the-job training as a colleague with a broader occupational skill background. Land-grant universities have a tradition of being responsive to community needs. But land-grant colleges and universities are facing the same challenges as other institutions of higher education, that of balancing their priorities of meeting community needs with those of promoting their overall missions. One way that institutions can monitor the effectiveness of their balance of sometimes conflicting missions, is through evaluation of their academic programs.

Program evaluation is essential to maintaining academic credibility. Typically, the faculty evaluation form that students complete for traditional classroom courses needs to be modified to yield useful information about faculty effectiveness in a distance education environment. Information about personal characteristics of successful instructors should be factored into future planning and hiring decisions. Information about effective instructional
strategies should be included in faculty training and support materials (American Council on Education, 1996b).

The technical systems and administrative support systems should be evaluated by the students, the faculty, and, if appropriate, the technical support staff. In designing the evaluation instruments, every effort should be made to separate issues related to the technical and administrative systems from those related to individual faculty performance; faculty evaluation typically rests with academic units, whereas systems evaluation is the purview of non-academic units.

National assessment vehicles created by content experts encourage institutions to accept extra-institutional certification of accomplishment, usually with local option to interpret the meaning of a particular score. That local-option aspect of national testing preserves institutions' rights to determine their own standards, while allowing degree-seeking learners more flexibility in meeting their goals. If national assessments used the economies of the network and a standards-based learning and testing architecture, institutional administrations could make individual judgments about learning. (Burnham, 1994; Dill, Massy, Williams, & Cook, 1996; Graves, 1994).

This section has discussed the theoretical framework for adult learning, distance learning and models for implementing distance education systems. Characteristics and needs of adult learners and the need for faculty support for adults have been emphasized. Selected components of the learning environment, the status of distance education in the United States, and the role
of the institution as part of the learning environment have been discussed. The following section details the methods used to describe selected components of the smaller learning environments discussed in the present study.
Methodology

This chapter details the population and sample, instrumentation, data collection, objectives and variables, and data analysis methods used in the study.

This study had two primary purposes: to describe selected characteristics of courses offered and students served by the LSU Evening School; and to compare characteristics of students enrolled in the course by the medium through which the course is delivered (defined as on-campus, telecourse, and off-campus). Pursuant to this purpose, a description of one specific course offered by the Evening School was provided.

Population and Sample

Target Population

The target population for this study was defined as learners who took non-laboratory social sciences courses taught using selected course delivery methods (traditional on-campus lecture, telecourse, and off-campus lecture), and offered through the LSU Evening School during the study period.

Accessible Population

The accessible population for this study was defined as all learners who were enrolled in Evening School sections of the subject course during the period Spring, 1995, through Fall, 1996, (excluding Intersessions).

Sample and Sampling Plan

The sample for this study was defined as all learners enrolled in Evening School sections of PSYC2000 awarding academic credit for each semester.
during the study period and for whom data were available. These data included all records which were available, verifiable, and for which permission for use had been obtained. These records included: personal and academic demographic records, as well as anonymous course/instructor evaluation data for learners enrolled in the subject course; enrollment numbers, syllabus information, scheduling information, administrative records, and selected instructor characteristics for sections of the subject course.

The sampling was a census. The sample unit was the individual learner for Objectives 1, 3, 4, and 5; and the course section for Objective 2. The study was a slice-in-time view or snapshot of learners, learning outcomes, and learning environments for Evening School offerings of the subject course over the study period.

Study Period and Selection of Subject Course

The study period was each semester from Spring, 1995, through Fall, 1996, (excluding Intersessions). The course (Introduction to Psychology, PSYC2000), was held constant in order to minimize the error attributable to an extraneous (for the purposes of this study) variable: subject matter interactions with descriptions, comparisons and relationships. Course selection criteria include: the course must be offered every semester, a similar course must be offered at other colleges and universities; the course must have been taught at LSU as traditional lecture course on campus, off-campus (but in the Baton Rouge area), and as a telecourse.
Instrumentation

This study used archival data from a number of sources, thus; instruments already existed, had been used, and the data from all sources were synthesized or compiled to be compatible each other. The instrumentation for this study was recording forms (on diskette and as hard copies) used to archive various records for LSU administrative, support and academic units. The other instrument used was a form to record learner responses from an evaluation instrument administered during the study period.

Major sources of data included the LSU Evening School, Office of Budget and Planning, Student Records and Registration, and Admissions. Samples of these records are provided in Appendix D. Course information regarding textbooks, instructors' office hours, course activities and use of educational media was obtained using the instructors' syllabi for the course sections. Copies of the syllabi are provided in Appendix C.

The other major data source was applicable results from a survey instrument package, including the Student Assessment of Teaching and Learning (SATL), which was used to examine students' perceptions of overall course quality, instructional quality, and perceived level of contact with the instructors. This instrument was developed, piloted and validated by a group of investigators under the direction of Dr. Chad Ellett (Ellett, McMullen, Rugutt, Culross, & Loup, 1997; McMullen, Ellett, Loup, & Rugutt, 1997).

The instrument package included a shortened form of the SATL, which consists of 25 items reflecting teaching and learning activities, which were rated...
on a three-point scale. The package also included the Personal Learning Environment Assessment, which was a modified version of the Science Laboratory Environment Inventory, and comprised 52 items reflecting students' perceptions of their own learning efficacy rated on a five-point Likert-type scale. Finally the package included a six-item Student Learning Efficacy Assessment reflecting student beliefs about the amount of effort, motivation and persistence expended to accomplish their learning goals; a ten-item summative index rating the emphasis of higher order thinking skills in the course; and a fifteen-item index rating the course, the quality of instruction, and providing demographic information. Within each class, the percentage of useable responses varied from 85% to 100% (McMullen et al., 1997).

In a study of all LSU Evening School courses offered in Fall, 1996, (McMullen et al., 1997), the investigators used the SATL instrument package to examine student perceptions of learning environment, course quality, course features, student’s level of participation, and level of effort. There were 145 courses included in this study, with a total enrollment of 2190 students.

Validation information for these instruments is referred to in the paper cited, as well as in Ellett et al. (1997). The 25-item SATL included questions relating to the accessibility of the instructor. The overall course quality and quality of instruction used two questions from the 52-item Personal Learning Environment Assessment (PLEA), included as part of the SATL packet. The study found that the 3 items from the SATL regarding instructor availability were all significant (p<.0001), and each accounted for 69% of the variance among
classes on the characteristic of learner's perceived self-efficacy. The two items from the assessment of course and instructor quality were also positively and significantly ($p<.0001$) correlated with learners' perceptions of self-efficacy, with correlations of .65 for instructor quality and .85 for overall course quality.

Prior to Fall, 1996, the instrument was used for Evening School courses, but not as part of a study. Thus learners in earlier semesters were not told the evaluation was part of a study. Only semesters for which instrument use was verified were included in this study.

**Data Collection**

Based on the literature, the investigator developed a list of the types of data needed for this study and contacted Dr. Culross, Director of the Evening School, to determine the best sources for the data. Once there was a list of data needs, Dr. Culross contacted the Treasurer's Office, the Registrar, the Office of Budget and Planning, and Dr. Chad Ellett in the College of Education by memorandum to introduce the investigator, tell them the purpose of the study, provide a list of data needs, and inform them that the investigator would be calling them to talk about the data. Dr. Culross worked with the analysts in the Office of Budget and Planning to develop codes for the learners to maintain privacy of records. She also approved the use of all agreed-upon data accessible by the Evening School for use in this study.

The investigator agreed to the following conditions set by the various administrative offices, departments, and the Evening School. Learners and instructors can be linked to sections of PSYC2000 by the call number for the
section. Confidentiality of records was maintained by Dr. Culross and the
investigator. As data were requested from other offices, Dr. Culross supplied
the necessary key, and the offices deleted the keys as they provided files for
the study. The investigator verified that this has been accomplished. The
coded data from all sources were collected as files and stored at the Evening
School. Data provided from hard copy reports and diskettes were entered or
transferred into spreadsheet files, checked for accuracy, and formatted.

The investigator contacted Dr. Robert Doolos, the LSU Registrar, by
telephone to arrange for access to Student Records data. Dr. Doolos replied
that his office would try to supply specific data if the investigator could not
access the data through the Evening School. The investigator was able to
access all learner records and registration data through the Evening School,
with the approval of Dr. Culross. The investigator contacted Dr. Robert Kuhn,
Associate Vice-Chancellor and Director of the LSU Office of Budget and
Planning, by telephone following his receipt of the memorandum from Dr.
Culross. Dr. Kuhn offered his assistance, to the extent possible, and that of his
staff. He indicated that this project would have to be handled after busy
periods for his staff and that Ms. Sandy Walker would contact the investigator
to arrange a meeting. At this meeting, it was agreed that Ms. Lesa Jeansonne
would work with the investigator as Ms. Jeansonne’s schedule permitted, and
Ms. Jeansonne would supply the necessary data in the agreed-upon coded
format. These data comprised the reports of pre-registered enrollment,
enrollment on the 14th day of class, final enrollment, and learners’ standard test
scores. The individual learner data were coded to ensure privacy of student records. The investigator received data as hard copies.

The investigator contacted Dr. Ellett, by telephone, e-mail and in person, to determine which data he had available, i.e., the semesters for which he had survey data. He supplied copies of the instruments and directed a graduate assistant to send data files electronically to the investigator. These files were sent and received by the investigator, put into data files and then erased from the LAN or intranet. Dr. Ellett also suggested contacting the Measurement and Evaluation Center directly for data which he did not have. The investigator e-mailed a letter, and followed up with sending a hard copy to Dr. Matthews, Director of the LSU Measurement and Evaluation Center, who authorized a member of his staff to release the necessary data to the investigator on diskette.

The investigator then contacted Dr. Irving Lane, chair of the LSU Psychology Department, to determine whether the department had their own evaluations and if they were archived. The department has its own evaluation, but these were not archived and not accessible to the investigator. Similarly, the department does not keep a file of course syllabi. Dr. Lane suggested contacting the instructors directly to obtain syllabi and further, reminded the investigator to contact the Institutional Review Board (human subjects) and file for an exemption of the study. The Office of Sponsored Research reviewed the study protocols and an exemption was granted for this study.
All three instructors for the subject course, who taught Evening School sections during the study period, supplied a syllabus for each section they taught. The instructors agreed to their use in this study and asked that their names be removed before the investigator included the syllabi in the final report; these are included in Appendix C.

The investigator downloaded data from the LSU Information Management System (IMS), excluding enrollment data for the course, instructor information, learners' standard test scores and previous level of education. All records were reviewed to ensure that no records designated "Buckley" (per the Family Educational Right to Privacy Act, the Buckley Amendment of 1993) were used in any manner. The procedure used for downloading data from IMS was to copy the on-line records and paste them into an EXCEL® spreadsheet.

The IMS records were accessed by selecting 'course information' from the Student Records Primary Menu (Form A in Appendix D), then selecting function VCST from the Course Information Menu (Form G in Appendix D). In the VCST screen (Form H, in Appendix D), Evening School sections of a course can be identified. Those sections were entered into the VROS screen (Form J in Appendix D) one section at a time; and the information for students enrolled was copied and down-loaded into the spreadsheet, which was formatted to accept these data in columns designated for each variable.

Once the course rosters were formatted on the spreadsheet, the student code was read into a column, and other identifying variables were deleted. These students were the sample for the study.
The Student Information Menu (Form B in Appendix D), the VSEM screen (Form C in Appendix D) was used to retrieve enrollment histories for each student. As enrollment histories were downloaded, investigators noted the semesters before and after the semester for the subject course. The VSUM screen (Form D in Appendix D) was used to supplement and verify the VSEM records. The VBIQ screen (Form E in Appendix D) was used to retrieve personal and academic demographic data for each student, and the VACA screen (Form F in Appendix D) was used for student enrollments in related courses, their course performance, and verify grade received for PSYC2000.

The investigator down-loaded the information from the VBIQ, VSEM, and VACA screens into a Microsoft Word® file. From these files, the investigator entered the data directly into a spreadsheet, which used the student code to identify the learner. Data entries verified by reviewing them and crossing out values on the hard copy as they were verified in the spreadsheet.

This section explains the manner in which data from various sources was used directly, transformed, or used to choose the best data for a particular variable. There are references to the data sources described in the previous section to guide the reader. The study objectives were:

1. Describe learners served by the LSU Evening School (ES) on selected personal and academic demographic characteristics.

   (a) entering status at registration for PSYC2000 (entry status) - nominal data, tells whether the student is regularly admitted or is admitted through a special program, reported as frequencies and percentages;
Source: VROS screen (Form J), lists college, year and curriculum for
students enrolled in sections of the subject course.

(b) gender - nominal data, dichotomous, reported as frequencies and
percentages;
Source: VBIO screen (Form E) lists gender of student.

(c) date of birth - interval data, reported as mean, standard deviation
and sample size; percentiles; used with date of registration to obtain the
learner’s age at the time he/she registered for the subject course;
Source: VBIO screen (Form E) lists birthdate of student.

(d) ethnicity - nominal data, reported as frequencies and percentages;
Source: VBIO screen (Form E) lists ethnic group of student.

(e) marital status - nominal data, reported as frequencies and
percentages;
Source: VBIO screen (Form E) lists marital status of student.

(f) residential status - nominal data, dichotomous, in-state or not,
defined by whether learner pays in-state tuition rates, reported as
frequencies and percentages;
Source: VBIO screen (Form E) lists residential status of student.

(g) citizenship status - dichotomous nominal data, US or non-US,
reported as frequencies and percentages;
Source: VBIO screen (Form E) lists citizenship of student.

(h) overall grade point average (GPA) at the time of enrollment in
PSYC2000 - interval data, reported as mean and standard deviation for
use in analysis-of-variance, and as frequencies and percentages for
ranges of GPA values for use in descriptive objectives; if first semester, these cases were excluded for this variable;

Source: VSUM screen (Form D) and VACA screen (Form F) list overall GPA for students at end of semester. The reported overall GPA at the end of the semester before students enroll in the subject course was used as the overall GPA at time of enrollment.

(i) grade in PSYC2000 - interval data, reported as mean and standard deviations for quality points;
Source: VACA screen (Form F) lists grade and quality points.

(j) semester GPA and overall GPA for the semester of enrollment in PSYC2000 - interval data, reported as frequencies, percentages, and percentiles for range of GPA values;
Source: VACA screen (Form F) lists grade and quality points for each course student is taking for the semester of interest.

(k) number of credit hours carried for the semester of enrollment in PSYC2000 - continuous data, reported mean and standard deviation;
Source: VSEM screen (Form C) lists number of credit hours carried by student for the semester of interest.

(l) number of semesters of continuous enrollment - ratio data, includes the present semester; continuous enrollment was defined as including summer enrollment if learner took courses in the summer, but non-enrollment in summer courses did not count as discontinuous enrollment. The semester of enrollment in the course was included in the
total; semester counted as one if the students were new and added to the total of students who were continuing.

Source: VSEM screen (Form C) shows semesters of enrollment.

(m) standard test scores - interval data, this is the learner’s ACT test scores, including composite, verbal and math scores, reported as mean, standard deviation and percentiles;

Source: Office of Budget & Planning; LSU accepts either the ACT or SAT test scores for individuals seeking undergraduate admission. Since more learners submit ACT scores than SAT scores, only one set is reported. This means that if an individual submits only SAT scores, those scores will appear in the field for standard test scores, and if an individual submits both ACT and SAT scores, the ACT score will appear in the score field. Individuals who enrolled in the subject course and were admitted to an academic program had submitted ACT scores.

(n) level of previous education - continuous data, reported as mean, standard deviation, and range;

Source: Office of Budget & Planning provided data on overall credit hours taken by learner, learner’s class year, and type of application learner submitted. The VSEM screen (Form C) lists all credit hours earned at LSU, and the VSUM screen (Form D) lists all hours earned at other institutions which the learner would like to transfer credits to LSU. High school graduation counted as twelve years. When the type of initial application was considered, along with degrees earned (VACA screen,
Form F), and the credit for high school added, an estimate of the learner's previous level of education was obtained and reported in terms of year classification (e.g., freshman, sophomore) for each student.

(o) college of enrollment, as of beginning of semester of enrollment in course - nominal data, reported as frequencies.

Source: VROS (Form J) lists college and curriculum declared by student as of registration date for subject course.

(p) registration date for the course - nominal data, includes pre-registration, and initial registration.

Source: VROS screen (Form J) shows date learner registered for the subject course. The registration date was compared to deadlines in the LSU Academic Calendar for the year and semester of interest. The individual's registration date for the course was converted from categorical to continuous data by determining the number of days between the date on which classes began. The investigator coded the data to indicate whether the registration date would be classified as pre-registered (Y, before the first day of class) or not pre-registered (N, on or after the first day of class).

2. Describe the specified course offered through the LSU Evening School on the following characteristics:

(a) course schedule (including day(s), and location):

days offered - nominal data; for telecourses this is the day(s) for the five on-campus sessions of the telecourses;
location - nominal data, tells location and building where course is held; for telecourses this is the room for the five on-campus sessions; both reported as frequencies and percentages; 
Source: VCST screen (Form H) shows all data.

(b) type of learning environment - nominal data, operationalized as on-campus lecture, telecourse, and off-campus lecture;
Source: VCST screen (Form H) shows all data.

(c) pre-registered course enrollment, initial course enrollment, final course enrollment - ratio data; final enrollment was defined as the number of learners enrolled who earn a grade, an incomplete, or are listed as auditing on the final grade, expressed as percentage of initial course enrollment; pre-registered enrollment is number enrolled on the first day of class; initial enrollment is number enrolled on the 14th day of class;
Source: LSU IMS database, Office of Budget & Planning supplied enrollment data, and enrollment on the 14th day of class was found on the VCST screen (Form H). The investigator compared the enrollments from the Office Budget and Planning to those found on the VCST screen. The Office of Budget and Planning enrollment figures were in some cases higher than the 14th day enrollment figures. The investigator found the student identification codes that were listed on the Office of Budget and Planning figures, but not on the 14th day enrollments. The extra enrollments were students who had dropped the course prior to the
last day to add and drop courses, and were included as pre-registered enrollment along with those students who enrolled prior to the first day of class.

(d) selected instructor characteristics, including age, teaching load, and university employment status and rank, if applicable - age is ordinal data, teaching load is ratio data, level of LSU appointment is ordinal data, and nature of appointment is nominal data; all are reported as frequencies and percentages;

Source: Evening School Records.

(e) availability of syllabus - nominal data, reported as frequencies;

(f) required text, recommended supplemental readings as reported in course syllabus - nominal data, reported as frequencies and percentages;

Source: Course syllabus for each section. Availability of course syllabus was a yes/no variable, textbook information was reported as number required/number recommended, i.e., 1REQ/1REC.

(g) required and recommended participation in audiovisual and other instructional activities as reported in the course syllabus - nominal data, reported as frequencies;

Source: Course syllabus for each section. Information regarding required and recommended participation in audiovisual and other instructional media activities was coded as yes, no, or maybe, with a code for how many activities (X is number unspecified). Thus, YX
denotes participation is required or recommended but the number of activities is unspecified.

(h) required and recommended use of computer activities as reported in the course syllabus - nominal data, reported as frequencies.

Source: Course syllabus for each section. Information coded as per the preceding variable.

(i) number of instructor's office hours as reported in the course syllabus - interval data, reported as frequencies.

Source: Course syllabus for each section. Coded as 0.1 if not specified on the syllabus, 0.5 if hours are listed as before and after class, or general (i.e. 'most days after 2:00'), and 0.6 if hours are listed, but appointment is recommended.

3. Describe the perceptions of the learners regarding the following learning environment and course instructor characteristics:

   (a) overall quality of course - interval data, measured on Likert-type scale, reported as frequencies and percentages;

   (b) quality of instruction - interval data, measured on Likert-type scale, reported as frequencies and percentages for each interval; and

   (c) availability of instructor for student contact - interval data, measured on Likert-type scale, reported as frequencies and percentages for each interval.

4. Describe the following learning outcomes for learners enrolled in PSYC2000:
(a) grade learners earned in PSYC2000;
(b) semester GPA and overall GPA;
(c) whether the learner enrolled in subsequent psychology or psychology-related (sociology) courses during his/her two semesters of enrollment following subject course - nominal data reported as frequencies and percentages;
Source: Student Records and Registration, Student Information; VACA screen (Form F) lists each learner's course registrations for a particular semester. The investigator coded these data for the two semesters of interest as Y or N.
(d) number of hours of subsequent psychology or psychology-related courses in which learner enrolled during his/her two semesters of enrollment following the subject course - ratio data, reported as frequencies, percentages and percentiles;
Source: Student Records and Registration, Student Information, VACA screen (Form F) lists each learner's course registrations for a particular semester. The investigator summed the number of credit hours for related courses over the semesters of interest; zero denotes that the learner was registered in one or both of the semesters of interest, but took no related courses; 0.02 denotes that the second subsequent semester was not completed at the time the investigator measured this variable, 0.03 denotes that learner dropped related courses, 0.04 denotes that learner was categorized as scholastic drop, 0.05 denotes
that no information was available for this learner, and 0.06 denotes that
the learner had graduated.
(e) learner's grade point average in subsequent course work in related
areas - interval data, calculated using total quality points for related
courses divided by total hours carried for related courses, reported as
frequencies, percentages, and percentiles;
Source: Student Records and Registration, Student Information, VACA
screen (Form F) lists each learner's course grades and quality points for
each course taken in a particular semester. The same coding scheme
was used for this variable as for the previous variable.
(f) Learner's overall GPA at end of two semesters of enrollment
subsequent to taking the subject course, interval data, reported as
frequencies, percentages and percentiles;
Source: Student Records and Registration, Student Information, VACA
screen (Form F) lists learner's overall GPA at the end of a semester.

5. Determine whether differences exist in the following factors by the type of
learning environment (on-campus lecture, telecourse, off-campus lecture):

(a) percentage of learners completing course;

(b) learner's number of semesters of continuous enrollment;

(c) learner courses load during semester of enrollment for course (number
of credit hours);

(d) college, as of beginning of semester of enrollment;
(e) learner’s age;
(f) learner’s gender;
(g) learner’s marital status;
(h) semester GPA;
(i) grade earned in PSYC2000;
(j) whether or not learners enrolled in subsequent psychology or psychology-related (sociology) courses;
(k) learner’s overall rating for course;
(l) learner’s perceived contact with instructor;
(m) overall GPA at the time of enrollment in the specified course; and
(n) learner’s overall GPA at the end of the second semester of enrollment following enrollment in the subject course.

Objective 1 was to describe learners on selected personal and academic demographic characteristics. The data were available for all 213 learners. The data for the characteristic ‘ethnicity’ included three non-specified designations. These cases were included in reporting frequencies and percentages. There were no standard test scores (ACT scores) available for a total of 109 learners. These cases were excluded when reporting statistics for this variable in this objective.

Objective 2 was to describe characteristics of the subject course (PSYC2000), including selected characteristics of the instructors for the sections of the course. There were eight sections of the subject course taught by three instructors offered through the Evening School during the study period.
The investigator was unable to access teaching load for the instructors; however the nature of their LSU appointment was available. All other information for this objective was available, and each course section was treated as an individual case.

Objective 3 was to describe learner perceptions toward learning environment and course instructors. The investigator was able to find course/instructor evaluations for three of the eight sections. Two of the sections for which data were available were taught off-campus and one was a telecourse section.

Objective 4 was to describe learning outcomes for the subject course. The sample size was 213 for learner's grade in the subject course, their semester and overall GPAs for the semester in which they were enrolled in PSY2000. The sample size for learners who were enrolled in the semester following the semester of enrollment in the subject course was 175; 41 learners did not enroll in the next two semesters, and there was no further information about these learners; one learner was classified scholastic drop and did not re-enroll for the two semesters following the semester of enrollment in PSYC2000; six learner's graduated at the end of the semester of enrollment in PSYC2000. There were no quality points in related courses for those 41 learners, nor were there any for learners who did enroll in the two semesters of interest, but not in related courses, however; for those learners who did enroll in the two semesters, overall GPA was recorded.
Objective 5 was to compare the three types of learning environments (on-campus lecture, telecourse, and off-campus lecture). Complete data were available for 8 of 11 continuous variables for this objective and for all 4 categorical variables. The sample size for the 12 variables for which there were complete information was 213. The sample size for incomplete continuous data was 104 for ACT comprehensive score; and learner’s overall course rating and perceived contact with instructor.

**Data Analysis**

The alpha level was set a priori at 0.05. The statistical package used for data analysis was SPSS® (SPSS Reference Guide, 1990). The data analyses for each objective are described below.

Objectives 1, 2, 3, and 4 are descriptive. Descriptive statistics for variables measured on a continuous level include sample mean, standard deviation, and sample size. Frequencies (converted to percentages) and sample sizes were used to summarize categorical variables.

Objective 5 is comparative. The characteristics compared for learners by type of learning environment (three levels) include: (a) percentage of learners completing course, reported as mean; (b) learner’s number of semesters of continuous enrollment, reported as mean; (c) learner course load this semester (mean number of credit hours); (d) college, as of beginning of semester, reported as mean number of learners in each college; (e) learner’s age; (f) gender; (g) learner’s marital status; (h) semester GPA; (i) grade earned the specified course; (j) whether or not learners enrolled in subsequent
psychology or psychology-related (sociology) courses, reported as mean; (k) learner's overall rating for course, reported as mean number of responses in each interval; (l) learner's perceived contact with instructor, reported as mean number of responses in each interval; (m) overall GPA at the time of enrollment in the specified course; and (n) learner's overall GPA at the end of the second semester of enrollment following enrollment in the subject course.

Comparative statistics for dichotomous categorical variables, such as learners' gender, used a two-tailed t-test. Comparisons for other categorical variables used a Chi-Square Test-of-Independence test. In order to compare continuous variables, such as learners' performance in subsequent related courses reported as mean GPA (quality points divided by credit hours) for psychology or related courses; or variables such as enrollment numbers, a one-way ANOVA was used. For any ANOVA showing significant differences among delivery media, post-hoc tests (Tukey's Honestly Significant Difference) were used to identify specific differences.
Findings

This study was conducted to describe selected characteristics of learning outcomes and learners enrolled in courses offered through the LSU Evening School in different types of learning environments. Evening School sections of a single course, Introduction to Psychology, were used as a framework for describing selected characteristics of three types of learning environments.

The learning environments were categorized by the medium through which instruction was delivered: on-campus lecture, telecourse, and off-campus lecture. Selected characteristics of learners, instructors, learning materials, course physical setting, organizational setting, learning outcomes and learner perceptions were described; and selected learner, instructor and outcome information were compared across learning environments.

Findings of the study are presented in this chapter, organized by objective and variables considered within each objective.

Objective One: Describe Characteristics of Learners

The first objective of this study was to describe learners served by the LSU Evening School (ES) on selected personal and academic demographic characteristics. There were 213 learners enrolled in the eight Evening School sections of the subject course during the study period.

As shown in Table 5, the majority of students were classified as undergraduates. The next largest group of learners were PASS Program participants, which is the Program for Adult Special Students offered through
the Evening School. The Program is designed to help nontraditional learners adjust or readjust to university life. Any student with at least a high school diploma or GED, who has not attended high school or college for at least a year, is eligible. The PASS Program is essentially a non-degree classification.

Table 5

<table>
<thead>
<tr>
<th>Status</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>133</td>
<td>62.4</td>
</tr>
<tr>
<td>PASS Program</td>
<td>78</td>
<td>36.9</td>
</tr>
<tr>
<td>Graduate</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>213</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The majority of the students (146, 68.5%) were female and 67 (31.5%) were male. Date of registration and date of birth were used in the interval function of the Excel\textsuperscript{TM} Spreadsheet to determine each student's age, expressed as an integer, on the date of registration. The mean value of age for learners was 26.9 years (SD=9.4). Ages ranged from 17 to 70 years.

Students self-reported their ethnic groups on their application forms and this is the ethnicity reported in the LSU Information Management System (IMS) database. The majority (178, 83.6%) of the students were classified as White/non-Hispanic. Table 6 describes the reported ethnicities of learners in the subject course.
Students also self-reported their marital status as married or single on their application forms and this is the number reported in the IMS database. The classification system for marital status has two mutually exclusive and unambiguous categories. In this classification, 200 (94%) of the students were single and 13 (6%) were married.

Table 6

Ethnicity of Students

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>White/non-Hispanic</td>
<td>178</td>
<td>83.6</td>
</tr>
<tr>
<td>Black/non-Hispanic</td>
<td>24</td>
<td>11.3</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>7</td>
<td>3.3</td>
</tr>
<tr>
<td>Other or non-specified</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>213</strong></td>
<td><strong>100.1a</strong></td>
</tr>
</tbody>
</table>

*Numbers may not add to 100.0 because of rounding.

The residential status of students was defined as either in-state or out-of-state in the IMS database. The purpose of this particular categorization for the university is tuition assessment. There were 199 (93.4%) in-state students and 14 (6.6%) out-of-state students enrolled in the subject course. The out-of-state classification included students from states including Alabama (1 student), Florida (2 students), Massachusetts (1 student), Mississippi (6 students), and Texas (4 students).

The majority of students enrolled in the subject course were U.S. citizens; there were 207 (97.2%) U.S. citizens and 6 (2.9%) non-U.S. citizens.
enrolled in the subject course. The international students were citizens of the Dominican Republic (1 student), India (1 student), Malaysia (1 student), Thailand (1 student), and Vietnam (2 students).

Table 7 describes learner academic demographic data. The grades are presented as numbers, with 0 corresponding to an ‘F’ and 4 corresponding to an ‘A’. For previous semester GPA, 32 GPA scores were missing. These scores were missing because the students were either new, had incomplete records, or had only dropped or audited courses previous to their enrollment in the subject course. Subject course grade data were missing for two students. One student audited the course and one student received a grade of incomplete. Mean values of grades and GPAs were between 2.63 and 2.68 for previous semester GPA, course grade, semester GPA, and overall GPA.

Table 7

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Percentiles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Previous semester GPA</td>
<td>181</td>
<td>2.65</td>
<td>0.88</td>
<td>2.04</td>
</tr>
<tr>
<td>Subject course grade</td>
<td>211</td>
<td>2.68</td>
<td>1.11</td>
<td>2.00</td>
</tr>
<tr>
<td>Semester GPA</td>
<td>212</td>
<td>2.64</td>
<td>1.06</td>
<td>2.00</td>
</tr>
<tr>
<td>Overall GPA, end of semester</td>
<td>212</td>
<td>2.63</td>
<td>0.88</td>
<td>2.17</td>
</tr>
</tbody>
</table>

Note. The 32 scores missing for previous semester GPA were due to new students, incomplete records, dropped or audited courses. Two missing scores for course grade were for a student auditing and one who received a grade of ‘Incomplete’. Semester and overall GPA scores regained one missing value, from an ‘Incomplete’ changing to a letter grade.

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Learners enrolled in the subject course were chiefly part-time students. The mean value for credit hours the students carried during the semester they were enrolled in the subject course was 8.2 credit hours (SD=4.5) for spring and fall semester sections of the course. Students were also described on their semesters of continuous enrollment. The semesters of continuous enrollment for individuals ranged from one semester to eighteen semesters. Continuous enrollment was defined as the number of semesters, including the one in which they enrolled in the subject course, during which the learners were enrolled at this institution or another LSU System institution.

Discontinuous enrollment was defined at the semester during which the learner had not been enrolled for two consecutive semesters. Non-enrollment during summer semesters was not considered to be discontinuous enrollment. Enrollment during summer semesters was added to the total.

The learners were also described in terms of their previous levels of education, defined as years. All were high school graduates and the minimum value for previous years of education was defined as 12, though learners may have had a GED (General Education Diploma) or credit hours from other institutions which didn't transfer to this institution. Enrollment history information from the IMS database, as well as from the initial enrollment application, was added to the initial value of 12, resulting in a value for previous years of education. As shown in Table 8, the mean value for previous education
level (13.2 years, SD=1.6) corresponds to a student beginning his/her sophomore year in college.

Students were also described on the college in which they were enrolled at the time they registered for the course. The largest number of students (n=79, 37.1%) were registered as Evening School students, which includes those students who hold a non-matriculating classification, known as PASS. PASS is the Evening School’s Program for Adult Special Students.

Table 8

Learner’s Enrollment History

<table>
<thead>
<tr>
<th>Enrollment history</th>
<th>M</th>
<th>SD</th>
<th>Maximum-Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours carried (credit hours)</td>
<td>8.2</td>
<td>4.5</td>
<td>20 - 3</td>
</tr>
<tr>
<td>Continuous enrollment (semesters)*</td>
<td>3.5</td>
<td>3.0</td>
<td>18 - 1</td>
</tr>
<tr>
<td>Previous education level (years)</td>
<td>13.2</td>
<td>1.6</td>
<td>22 - 12</td>
</tr>
</tbody>
</table>

Note. The semesters of continuous enrollment value was calculated starting with the semester of enrollment in the course as 1, and continuing backward until a learner has not been enrolled for 2 semesters, not including summer semesters. All learners in the study were high school graduates. The value for previous level of education was calculated by defining high school graduation as 12 years and using other enrollment data to determine a value to be added to 12. The sample size for each mean value was 213. Maximum-Minimum are the maximum and minimum values, respectively, for the variables listed.

* Includes present semester.

The second largest group of students were those enrolled in Junior Division, which is the freshman college at LSU (n = 65, 30.5%). Junior Division provides programs for beginning students to become oriented with the campus,
evaluated for academic tracks, and enrolled at LSU. Nine senior colleges were each identified as the enrollment college by two or more of the enrolled students. (see Table 9).

There were 104 (48.8%) learners in the study group who submitted standardized test (ACT) scores. The students who did not submit standardized (ACT or SAT) test scores may have been PASS students, graduate students, or may have had incomplete application packages at the time of the study.

Table 9

Learner's College of Enrollment

<table>
<thead>
<tr>
<th>College or school</th>
<th>Learners enrolled in course</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evening School</td>
<td>79</td>
<td>37.1</td>
</tr>
<tr>
<td>Junior Division</td>
<td>65</td>
<td>30.5</td>
</tr>
<tr>
<td>General College</td>
<td>16</td>
<td>7.5</td>
</tr>
<tr>
<td>Arts &amp; Sciences</td>
<td>12</td>
<td>5.6</td>
</tr>
<tr>
<td>Engineering</td>
<td>11</td>
<td>5.2</td>
</tr>
<tr>
<td>Agriculture</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td>Basic Sciences</td>
<td>7</td>
<td>3.3</td>
</tr>
<tr>
<td>Design</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Education</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Business Administration</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Mass Communications</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Graduate School</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>All</td>
<td>213</td>
<td>100.1%</td>
</tr>
</tbody>
</table>

*Numbers may not add to 100.0 because of rounding.

Reported in Table 10 are the composite, English, and math scores for students enrolled in the subject course. The mean ACT comprehensive score
was 22.3 (SD=4.0); and the scores ranged from a low of 14 to a high of 34. The maximum possible score in any area of the ACT tests is 36. As indicated in Table 10, the range of scores for all parts of the ACT was 11 - 36 for this group of students.

Table 10

**Learners' Standardized Test Scores**

<table>
<thead>
<tr>
<th>ACT test scores</th>
<th>M</th>
<th>SD</th>
<th>Maximum-Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive</td>
<td>22.3</td>
<td>4.0</td>
<td>34 - 14</td>
</tr>
<tr>
<td>English</td>
<td>22.6</td>
<td>4.8</td>
<td>36 - 11</td>
</tr>
<tr>
<td>Math</td>
<td>21.2</td>
<td>4.7</td>
<td>31 - 14</td>
</tr>
</tbody>
</table>

\(n=104. \) Maximum and minimum refer the range of ACT scores achieved by learners in the sample who also submitted ACT scores.

The individual's registration date for the course was converted from categorical to continuous data by determining the number of days between the date on which classes began (from the LSU Academic Calendar for the year and semester of interest) and the date the individual registered for the subject course. The LSU Academic Calendar is published every academic year by the LSU Office of Student Records and Registration, and it reports the official day that classes begin for each semester of that academic year. These values were categorized as either 1 (yes) or 2 (no), defined as whether or not the individual was registered for the subject course prior to the beginning date for classes. The majority (\(n=167, 78.4\%\)) of the students were enrolled in the
subject course prior to the first day of class. Forty-six (21.6%) students registered on or after the first day of class.

Objective Two: Describe Course Characteristics

The second objective was to describe the subject course, Introduction to Psychology, in terms of selected scheduling characteristics, instructors, enrollment levels, instructor code, selected instructor characteristics, and course requirements. As shown in Table 11, this component of the learning environment was examined for the eight Evening School sections of the course.

Table 11
Schedule Information for Subject Course by Learning Environment

<table>
<thead>
<tr>
<th>Learning environment</th>
<th>Day(s)</th>
<th>Location</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-campus lecture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Summer, 1995</td>
<td>Monday - Thursday</td>
<td>LSU</td>
<td>Instructor 3</td>
</tr>
<tr>
<td>• Fall, 1995</td>
<td>Thursday</td>
<td>LSU</td>
<td>Instructor 1</td>
</tr>
<tr>
<td>Telecourse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Spring, 1995</td>
<td>Monday</td>
<td>LSU</td>
<td>Instructor 2</td>
</tr>
<tr>
<td>• Spring, 1996</td>
<td>Monday</td>
<td>LSU</td>
<td>Instructor 2</td>
</tr>
<tr>
<td>Off-campus lecture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Spring, 1995</td>
<td>Thursday</td>
<td>Local H.S.</td>
<td>Instructor 3</td>
</tr>
<tr>
<td>• Fall, 1996</td>
<td>Wednesday</td>
<td>Local H.S.</td>
<td>Instructor 3</td>
</tr>
<tr>
<td>• Spring, 1996</td>
<td>Tuesday</td>
<td>Local H.S.</td>
<td>Instructor 3</td>
</tr>
<tr>
<td>• Fall, 1996</td>
<td>Thursday</td>
<td>Local H.S.</td>
<td>Instructor 3</td>
</tr>
</tbody>
</table>

* Course location is either on the LSU campus or at a local high school.

b Course instructor identification.

All of the course sections met from 6:00 - 9:00 p.m., one night per week during spring and fall semesters, and 3 - 5 nights per week in summer.
sessions. Instructor 1 taught one on-campus section; Instructor 2 taught both of
the two telecourse sections; and Instructor 3 taught five of the eight course
sections, including one of the on-campus sections and all four off-campus
sections. Table 11 summarizes logistical and scheduling information.

Enrollments were measured at different times during the semester. This
objective focuses on enrollments measured on the first day (pre-registered
enrollment), the 14th day of class (initial enrollment), and the at the end
(5:00pm) of the last day to drop a class (final enrollment). The mean number of
learners who pre-registered for the subject course was 30.9 (SD = 5.4).
Information concerning other enrollment categories is summarized in Table 12.

Table 12

Course Enrollments by Enrollment Categories

<table>
<thead>
<tr>
<th>Enrollment category</th>
<th>M</th>
<th>SD</th>
<th>Maximum-Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-registered</td>
<td>30.9</td>
<td>5.4</td>
<td>41 - 26</td>
</tr>
<tr>
<td>Initial</td>
<td>29.1</td>
<td>3.3</td>
<td>34 - 24</td>
</tr>
<tr>
<td>Final</td>
<td>26.5</td>
<td>3.7</td>
<td>32 - 22</td>
</tr>
</tbody>
</table>

a Pre-registered enrollment is number of learners enrolled on the first day of
class. Initial enrollment is the number of learners enrolled on the 14th day of
class. Final enrollment is the number of learners enrolled on the last day to
drop a class. b The sample size for each mean value was 8 (course sections).
c Maximum and minimum refer to the range of values for number of learners
enrolled at the specific measurement time.

Two other components of the learning environment, selected instructor
and course requirements were described. Selected course requirements were
obtained from the course syllabus for each section, which was provided by the instructor for the section.

All three instructors furnished copies of the course syllabus. Instructor 1 used the same syllabus for every section. The other instructors used a different syllabus for each section they taught. Course syllabi are given in Appendix C.

There were three instructors for the eight sections of the subject course. The instructor’s ages, defined as the age, expressed as an integer, when each taught a course section. Instructors’ ages ranged from 33-45 years (Table 13).

Table 13

<table>
<thead>
<tr>
<th>Instructor and Syllabus Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Employment status*</td>
</tr>
<tr>
<td>Rank</td>
</tr>
<tr>
<td>Required texts</td>
</tr>
<tr>
<td>Extra readings*</td>
</tr>
<tr>
<td>Other activities*</td>
</tr>
<tr>
<td>Computer use*</td>
</tr>
<tr>
<td>Office hours*</td>
</tr>
</tbody>
</table>

*Employment status is the nature of the instructor’s academic appointment. Extra readings are those listed in the syllabus; possible indicates an unspecified number of readings. Other activities may involve use of educational technology. Computer use is the number of activities which involve computers. Office hours are instructor’s office hours as listed in the course syllabus; specified denotes that the instructor listed specific office hours and recommended learners call ahead to make appointment.
Each of the three instructors taught sections which were presented using a single course delivery method, with the exception of Instructor 1, who used the off-campus lecture for four of the five sections taught and used the on-campus lecture for a single course section. Instructor 3 taught a single section of the subject course and delivered instruction as an on-campus lecture. Other information about the instructors and their course requirements is summarized in Table 13.

Objective Three: Describe Learner Perceptions

The instrument used to describe learner perceptions of course quality, instruction quality, and availability of the instructor was the Student Assessment of Teaching and Learning (Ellett et al., 1997). A copy of the instrument is provided in Appendix E. Data concerning instruction and course quality were from Questions 36 and 38, respectively, and data for instructor accessibility were from Question 24. Data were available for two course sections in Spring, 1996, and one in Fall, 1996. The two spring sections were a telecourse section and an on-campus section. The fall section was an off-campus section. The response data are grouped together, from one telecourse section and two off-campus lecture sections.

Learners' perceptions of quality were defined as the response when learners were asked to provide a grade for the specific two items, quality of teaching and overall course quality, expressed as percentages. There were 53 (of 86 possible) respondents to the two questions. Learners' perceptions of
course quality were expressed as grades, resulting in a mean grade of 91% (SD=11), corresponding to an A on the scale provided in the instrument. As shown in Table 14, the mean grade for quality of instruction was 89% (SD=12).

Table 14
Learner Perceptions of Quality of Course and Instruction

<table>
<thead>
<tr>
<th>Learner perception</th>
<th>M</th>
<th>SD</th>
<th>Maximum-Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade for overall quality of course b</td>
<td>90.9</td>
<td>11.0</td>
<td>100 - 50</td>
</tr>
<tr>
<td>Grade for quality of instruction b</td>
<td>88.9</td>
<td>12.3</td>
<td>45 - 10</td>
</tr>
</tbody>
</table>

a The sample size for each mean value was 53. b Units are percentages.

There was no single question that specifically addressed the perceived availability of the instructor for student contact. The one item that was most indicative of accessibility of the instructor was quantity and quality of feedback on graded work. There were 48 (out of 86 possible) respondents to the instructor accessibility item. This item used a three point Likert-type scale corresponding to: learning not enhanced (1), learning sometimes enhanced (2), and learning almost always enhanced (3). The majority of the 48 respondents (62.5%) chose ‘learning almost always enhanced’, 29.2% chose ‘learning sometimes enhanced’, and 8.3% chose ‘learning never enhanced’.

Objective Four: Describe Learning Outcomes

The fourth objective of this study was to describe learning outcomes for learners enrolled in LSU Evening School sections of the subject course during the study period. This was accomplished using traditional outcome evaluations (grades and GPAs). The first set of variables provides a summary of learners'
grades and GPAs at the end of the semester of enrollment in the subject course. The second set of variables describe learner's choice of related courses and overall performance of all learners at the end of the next two semesters of enrollment.

Table 15

Selected Learning Outcomes for Subject Course

<table>
<thead>
<tr>
<th>Learning outcomes</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Percentiles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Subject course grade</td>
<td>211</td>
<td>2.68</td>
<td>1.11</td>
<td>2.00</td>
</tr>
<tr>
<td>Semester GPA</td>
<td>212</td>
<td>2.64</td>
<td>1.06</td>
<td>2.00</td>
</tr>
<tr>
<td>Overall GPA, end of semester</td>
<td>212</td>
<td>2.63</td>
<td>0.88</td>
<td>2.17</td>
</tr>
</tbody>
</table>

Note. The two missing scores for course grade were for one student who was auditing the course and another who received a grade of 'Incomplete'. The semester and overall GPA scores were missing only one value, and this was due to conversion of the 'Incomplete' to a letter grade.

Table 15 summarizes learner academic demographic data. The mean value for course grade was 2.68 (SD = 1.11). The grades are presented as numbers, with 0 corresponding to an 'F' and 4 corresponding to an 'A'. Subject course grade data were missing for two students. One student audited the course and one student received a grade of incomplete.

The second set of variables describe the number of credit hours for which the learners enrolled in related (psychology or sociology) courses during the next two semesters in which each learner enrolled. The learner's performance in related courses, defined as quality points earned for related courses divided by total credit hours of related courses, is summarized as GPA.
in related courses. The data for learner’s overall GPA at the end of two semesters refers to the end of the next two semesters of enrollment. This last information refers to the GPA for all 213 learners, regardless of courses taken subsequent to taking the subject course.

Of the 213 learners who enrolled in the subject course, 60 learners did not enroll in any related courses in their next two semesters of enrollment, because they were classified as scholastic drop (2 learners), or had graduated (7 learners) or there was no further information regarding these learners (51 learners). Another 99 learners were enrolled during the subsequent semesters, but they did not enroll in courses related to the subject course. There were also 54 learners who enrolled in subsequent semesters and enrolled in courses related to the subject course.

Table 16

Subsequent Enrollment in Related Courses

<table>
<thead>
<tr>
<th>Enrollment information</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>25</th>
<th>50</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related courses, credit hours</td>
<td>54</td>
<td>4.6</td>
<td>3.5</td>
<td>3.00</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>GPA in related courses</td>
<td>54</td>
<td>2.32</td>
<td>1.36</td>
<td>1.00</td>
<td>3.00</td>
<td>3.35</td>
</tr>
<tr>
<td>Overall GPA, end of 2 semesters</td>
<td>213</td>
<td>2.62</td>
<td>0.90</td>
<td>2.31</td>
<td>2.74</td>
<td>3.34</td>
</tr>
</tbody>
</table>

* in the next 2 semesters in which learner was enrolled subsequent to taking subject course.

The overall GPA for all learners at the end of two semesters was included to provide a more complete picture of learner status for two
semesters following the subject course semester. If the learner left, graduated or there was no further information, the overall GPA was defined as the GPA for their last semester of enrollment. Table 16 summarizes information regarding learners' subsequent enrollments in related courses.

Objective Five: Compare Learning Environments

The final objective of this study was to determine whether differences existed in selected learner characteristics, learning outcomes, and learner perceptions by the type of learning environment.

This first section compares learners in terms of their age, educational history and course load by type of learning environment. The next section compares learner's college of enrollment at the time of registration for the course by type of learning environment. The third section discusses learner demographics by type of learning environment; and the fourth discusses selected learning outcomes by learning environment.

One-way analyses of variance were used to compare the mean values for learner's age, enrollment history and course load by learning environment. Tukey's HSD (Honestly Significant Difference) was used to determine which environments were equivalent ($p > .05$). There were no significant differences ($p > .05$) among learning environments for learner's overall GPA at the beginning of the semester of enrollment for the subject course (see Table 17).

Learners in off-campus sections of the course were significantly older ($p < .001, M = 31$ years and $22$ years, respectively) than those in on-campus sections, while learners' semesters of continuous enrollment were significantly
fewer in off-campus sections than in on-campus sections (mean values of 3 and 4.5 semesters, respectively). The number of credit hours carried by learners in off-campus sections were significantly fewer than those of learners in either on-campus or telecourse sections (mean values of 6, 9 and 10 credit hours, respectively). These comparisons are summarized in Table 17.

Table 17
Comparisons of Learner’s Age, History, & Courseload by Learning Environment

<table>
<thead>
<tr>
<th>Learning Environment</th>
<th>On-campus</th>
<th>Telecourse</th>
<th>Off-campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Age</td>
<td>22b</td>
<td>25ab</td>
<td>31a</td>
</tr>
<tr>
<td></td>
<td>5.6</td>
<td>7.3</td>
<td>10.3</td>
</tr>
<tr>
<td></td>
<td>49</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>Continuous enrollment</td>
<td>4.5a</td>
<td>3.7ab</td>
<td>3.0b</td>
</tr>
<tr>
<td></td>
<td>3.7</td>
<td>3.4</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>49</td>
<td>63</td>
<td>99</td>
</tr>
<tr>
<td>Overall GPA at registration</td>
<td>2.8</td>
<td>2.5</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>42</td>
<td>58</td>
<td>81</td>
</tr>
<tr>
<td>Credit hours carried</td>
<td>9.3a</td>
<td>10.2a</td>
<td>6.3b</td>
</tr>
<tr>
<td></td>
<td>4.6</td>
<td>4.5</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>49</td>
<td>63</td>
<td>99</td>
</tr>
</tbody>
</table>

*Tukeys HSD (Honestly Significant Difference) comparison. Means with same letter are not significantly different (p > .05). c Reported as number of semesters.
Learners' colleges of enrollment for the semester they were enrolled in the subject course were compared across learning environments. The top three colleges or administrative units in terms of learners enrolled in the subject course were Evening School, Junior Division, and the Senior Colleges. As shown in Table 18, the Chi-square Test of Independence statistic for the crosstabulation of college of enrollment and learning environment was significant ($p < .001$).

**Table 18**

**Comparisons of Learner's College of Enrollment by Learning Environment**

<table>
<thead>
<tr>
<th>Learning environment</th>
<th>College of enrollment</th>
<th>PASS</th>
<th>Junior Division</th>
<th>Senior Colleges</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-campus</td>
<td>Count</td>
<td>5</td>
<td>21</td>
<td>22</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>18.2</td>
<td>14.8</td>
<td>15.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Expected</td>
<td>28</td>
<td>142</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>Telecourse</td>
<td>Count</td>
<td>16</td>
<td>26</td>
<td>22</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>24.3</td>
<td>19.7</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Expected</td>
<td>65</td>
<td>132</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Off-campus</td>
<td>Count</td>
<td>59</td>
<td>18</td>
<td>22</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>37.5</td>
<td>30.5</td>
<td>31.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Expected</td>
<td>157</td>
<td>59</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>80</td>
<td>65</td>
<td>66</td>
<td>211</td>
</tr>
</tbody>
</table>

*Note.* There were 211 learners; graduate students were omitted. Chi-Square Likelihood Ratio = 40.441; df = 4; $p < 0.05$; minimum expected count is 14.79.

The Chi-square test of independence revealed significant ($p < 0.05$) values, indicating that the variables learning environment and college of enrollment were not independent. The nature of the association was assessed by examining the deviation of the actual (observed) frequencies in the cells.
from the expected values. This was computed as the percentage of expected values by dividing the observed value by the expected value for each cell in the crosstabulation table. These values are presented in the crosstabulation table (Table 18). The cell that deviated the most from the expected value was the number of learners that were enrolled in the on-campus sections of the course that were PASS students. This cell had only 28% of the expected value, indicating that there were substantially fewer than than the independence of variables would have produced. Among the students enrolled in the on-campus sections of the course, both the Junior Division and Senior Colleges had higher numbers of learners than were expected (142% and 147%, respectively). Telecourse sections of the course enrolled fewer PASS students and more Junior Division students than were expected (65% and 132%, respectively). Among learners enrolled in off-campus sections of the course, the number of PASS Program participants was higher than expected (157%), and the number enrolled in both of the other two colleges were lower than expected (59% and 71%, respectively).

The Chi-square Test-of-Independence for the crosstabulation of gender and marital status by learning environment was insignificant ($\chi^2 > .05$), indicating that learning environment and gender ($\chi^2 = 5.312; \text{df}=2; \chi^2 > .05$) and marital status ($\chi^2 = 4.139; \text{df}=2; \chi^2 > .05$) are independent variables.

The Chi-square Test-of-Independence for the crosstabulation of learning environment and whether learners in the original eight course sections took related courses in psychology or sociology in the semesters after they took
the subject course was not significant ($p > .05$), indicating that learning environment and the decision to take another related course are independent variables. (Table 19).

Table 19

Comparisons of Enrollments in Related Courses by Learning Environment

<table>
<thead>
<tr>
<th>Learning environment</th>
<th>Learners taking related courses</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Total</td>
</tr>
<tr>
<td>On-campus</td>
<td>Count</td>
<td>12</td>
<td>30</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>14.9</td>
<td>22.8</td>
<td>37.7</td>
</tr>
<tr>
<td></td>
<td>% of Expected</td>
<td>81</td>
<td>110</td>
<td>191</td>
</tr>
<tr>
<td>Telecourse</td>
<td>Count</td>
<td>21</td>
<td>28</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>17.3</td>
<td>29.7</td>
<td>47.0</td>
</tr>
<tr>
<td></td>
<td>% of Expected</td>
<td>121</td>
<td>94</td>
<td>215</td>
</tr>
<tr>
<td>Off-campus</td>
<td>Count</td>
<td>21</td>
<td>41</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td>14.3</td>
<td>46.5</td>
<td>60.8</td>
</tr>
<tr>
<td></td>
<td>% of Expected</td>
<td>121</td>
<td>88</td>
<td>209</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>54</td>
<td>99</td>
<td>153</td>
</tr>
</tbody>
</table>

Note. There were 153 learners in the original sample of 213 learners in the original 8 learning environments who either did or did not take another related course. There was another group of 60 learners which included learners who graduated, were scholastic drops, or for whom there was no further information. These 60 learners were excluded from this analysis. Chi-Square Likelihood Ratio = 5.235, df = 2; $p > 0.05$.

Learning Outcomes are at the core of many discussions of adult students and learning environments. Learning outcomes discussed here are traditional ones, as course grade, or GPA and learning outcomes which include the percentage of learners who complete the course. Related subject areas were defined as courses offered by Psychology or Sociology Departments.
### Table 20

**Comparisons of Selected Learning Outcomes by Learning Environment**

<table>
<thead>
<tr>
<th>Variable</th>
<th>On-campus</th>
<th>Telecourse</th>
<th>Off-campus</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
</table>
| Grade in course           | 2.80      | 2.73       | 2.62       | 0.543 | .582
|                           | 1.15      | 0.92       | 1.20       | (2.211) |
|                           | 49        | 63         | 99         |     |
| Semester GPA              | 2.79      | 2.62       | 2.61       | 0.504 | .605
|                           | 0.97      | 1.07       | 1.15       | (2.213) |
|                           | 49        | 64         | 100        |     |
| Overall GPA, end of next 2 semesters | 2.74 | 2.57       | 2.59       | 0.560 | .572
|                           | 0.84      | 0.77       | 1.05       | (2.213) |
|                           | 49        | 64         | 100        |     |
| Learners completing course (%) | 87.8 | 97.1       | 83.2       | 5.306 | .058
|                           | 6.3       | 4.2        | 4.6        | (2.8)  |
|                           | 2         | 2          | 4          |     |

There were no significant differences (p > 0.05) among learning environments for any of the learning outcomes in Table 20.
Summary, Conclusions and Recommendations

This section summarizes the study, presents conclusions, and provides recommendations for future research and possible applications of the results.

Purpose Statement and Objectives

The purpose of this study was to describe selected characteristics of courses offered and learners served by the LSU Evening School, and to determine whether differences exist in selected factors contributing to the learning environment by type of learning environment. The investigator collected information which provided a description of selected general characteristics of one specific course offered through the Evening School. In addition, this study compared characteristics of students enrolled in the course by the medium through which the course was delivered (defined as on-campus, telecourse, and off-campus).

The five objectives for the study were to: 1) describe the learners on selected personal and academic demographic characteristics; 2) describe the sections of the specified course on selected course requirements and enrollment levels; 3) describe the perceptions of learners enrolled in each section of the course regarding selected issues about the learning environment and the course instructor; 4) describe selected learning outcomes for each section of the course, including learner performance expressed as grades, and learner interest expressed as the number of related courses in which they enrolled subsequent to completing the subject course; and 5) compare the three types of learning environments on selected characteristics and outcomes.
Procedures and Methods

This was an ex post facto study which described selected elements of different learning environments used by instructors for courses offered through the Evening School and targeting the non-traditional learner. There were a total of 213 learners enrolled in the eight Evening School sections of the subject course. There were three instructors teaching the different course sections, and of the eight sections, four were off-campus lecture sections, two were telecourse sections, and two were on-campus lecture sections offered in the evening. Data were collected from two sources, institutional records and from the course syllabus provided by the instructor. The investigator used descriptive statistical analyses for the first four objectives, and comparisons of means or crosstabulation of categorical variables related to the final objective. A summary of findings, as well as conclusions and recommendations for each objective are presented below.

Objective One: Describe Characteristics of Learners

Learners were described on personal and academic demographic characteristics. Though there is no such person as a ‘typical’ adult learner, these data indicate that overall, the learners enrolled in the eight sections of the subject course were single, approximately twice as likely to be female than male, White/non-Hispanic, under the age of 33 and approximately twice as likely to be enrolled as an undergraduate student than as a PASS student. The learners were most likely to be enrolled in the Evening School or Junior Division.
These findings have also been noted in a study by Wallace (1997) in which 30% of distance learning students in 1984 were under 26 years old; whereas in 1995, 73% of the distance learning students were under 26 years old. The distance learning students were more likely to be female than the on-campus students, in whom the gender distribution was closer to an even split.

In a marketing survey of learners enrolled in ES sections of all courses during Spring semester, 1995, respondents gave having a full-time job, finishing a degree, and convenience, respectively, as the top three reasons for taking courses through the Evening School. The demographic responses supported previous Evening School data that the typical ES learner is unmarried and may work full- or part-time (Culross, 1995). As previously stated, the only options for marital status in the present study were married or single, and thus data on marital status may be of limited usefulness.

The distribution of credit hours carried for each student was bi-modal, which was reflective of the mix of full-time and part-time students in the class. One-half of the learners carried 6 hours of credit or less during the semester in which they were enrolled in the course. This result is consonant with the picture of an older student who works full-time and takes classes at night. The result is also striking in comparison to the traditional student profile. The entering undergraduate student profile for degree-seeking freshman for the academic year 1995-1996, indicated that 92% of these students were full-time and 8% were part-time (LSU Office of Budget and Planning, communication by memorandum, 1996).
Standard test scores for learners in the present study refer to ACT scores. The sample size for this variable was 104 or 49% of learners enrolled in the subject course. Learners who enroll in the PASS Program generally do not submit standard test scores, and there may have been learners entered on a probationary basis pending receipt of scores, or their applications may not have been complete.

Moore and Kearsley (1996) summarized studies of predictors of learner success in distance education programs, and one of the best predictors of success was higher standard test scores. Though there are other predictors of learner success, the standard test score is useful. It is unclear how one would adapt this predictor variable. Adaptation would be necessary because of learners such as the PASS students in this study, who generally do not submit standard test scores.

Objective Two: Describe Course Characteristics

The individual sections of the subject course were described on selected characteristics. Course sections were scheduled to meet the time constraints of the learner who works full-time or has family constraints or both. The schedule may also appeal to more traditional learners because of work, convenience, needing a specific course, or preferring evening courses. The eight course sections all met from 6:00-9:00 pm, one night per week during spring and fall semesters and 3-5 nights per week during summer semesters. Telecourse sections usually meet at least five times per semester, which usually translates into once per week in summer sessions.
Each of the eight instructors provided a course syllabus for learners in each section taught. One instructor used the same syllabus for all sections, one taught only one section, and the other taught two sections with a different (updated) syllabus for each section. The course requirements were defined as those listed in the course syllabus for the purposes of the present study. This measurement was limited because there were essentially four syllabi for eight sections and the syllabi stated requirements such as computer activities, office hours, and supplemental readings rather ambiguously. Egan and Sebastian (1995) surveyed conventional and distance learning students about factors contributing to positive learning outcomes. One of the most important items cited by distance learning students was having all relevant course information and instructional materials available to them prior to the beginning date of the course. The syllabus is equally important to on-campus learners who may be combining daytime courses with evening courses or distance learning courses.

**Objective Three: Describe Learner Perceptions**

Learner evaluations of courses and instructors are common at this institution. Learner perceptions of learning environments, course quality and other components of the course are often measured but not specifically stated as learner perceptions. Learner evaluations of the quality of the course and of the instructor are particularly susceptible to the halo effect, in which the learners' evaluations depend on the grade they expect to receive in the course or some other interaction between instructor and learner (Ary, Jacobs & Razavieh, 1990). pp. 244-245
The learners' evaluations of course and instructor, reported as numeric grades, corresponded to an 'A' for overall course quality and 'A' for quality of instruction. The item that was most indicative of instructor accessibility was quantity and quality of feedback on graded work. Over 60% of respondents to this item chose 'learning almost always enhanced'.

It is difficult to attach meaning to the responses because data were available for three of the eight sections of the subject course, with a total enrollment of 86 learners. Data for the other five sections were not available or were available but not translatable from code. The three sections for which data were available were two off-campus lecture sections and one telecourse section. The response rate from the two off-campus sections was 70% and 62%, and the response rate from the telecourse section was 84%. The greater response rate from the telecourse section may have been partially the result of the set-up of telecourses. There are only five on-campus meetings and these are usually for reviews and tests. The instructor has a relatively captive audience in this situation.

Objective Four: Describe Learning Outcomes

Learning outcomes were described for the eight sections of the subject course. In the present study, learning outcomes were defined operationally as grades learners earned in the course, semester GPA and overall GPA.

Grades are reported in the IMS database as individual course grades, semester GPAs and overall GPAs. If all three measurements are close to the same value, as was the case in this study, the learner may be a new learner, a
learner whose academic performance is relatively constant, or a re-entry learner whose grades were not included in the measurement of learner's overall GPA at the beginning of the semester of enrollment. If the three values are different (e.g. a course grade of 2, a semester GPA of 2.5, and an overall GPA of 3.5), it is possible that there were factors in the learning environment or uncommon events in the learner's life that explain the result. Counselors and support staff may use these indicators as a flag to communicate with the learner, and with the instructor.

The second group of variables for this objective concerned the period after the semester of enrollment in the subject course. These are whether the learners took related courses in the next two semesters in which they enrolled, their GPA in those related courses, and overall GPAs for all learners at the end of the second semester after the semester of enrollment in the course. These variables were intended to describe a learning outcome, e.g., after taking the subject course, did learners take another psychology or sociology course in their next two semesters? The last measurement was intended to describe another learning outcome, learners' academic performance after two semesters for all learners who were enrolled in the subject course.

A recent study of learning outcomes for distance learning environments (Baker, Hale, Gifford, 1997) concluded that learners with access to well-designed distance learning courses were more likely to enroll in similar courses and develop more positive attitudes for the subject than learners in more traditional learning environments. Fifty-four of the 213 learners in the subject
course for the present study took a related course during their next two semesters of enrollment.

**Objective Five: Compare Learning Environments**

The purpose of this objective was to determine whether differences existed in selected variables by the type of learning environment (on-campus lecture, telecourse, off-campus lecture). It was not possible to separate potential effects of learning environment from those of instructor in this study because the instructors generally taught in a single learning environment.

There were no significant differences (p > .05) among learning environments for any grade or GPA measurement, gender, or marital status. This finding is consistent with the findings of other investigators. The equivalency of traditional and distance learning has been debated over the past decade (Orr, 1997; Russell, 1996). Recent studies have concluded that if learning outcomes are to be defined as grades alone, both methods of instruction are equivalent for many people (Anderson & Harris, 1997; Biner, Summers, Dean, Bink, Anderson & Gelder, 1997). These investigators have confirmed that the difference is not in the technology, but in the whole learning environment. A systems approach such as this also requires multiple methods of assessment.

There were no significant differences (p > .05) in whether learners who took the study course in a particular learning environment also took related courses after they completed the study course. This finding is different from those of Baker, Hale, and Gifford (1997), in that they found that distance
learning courses may make learners more enthusiastic about or interested in related courses. The difference may be in that Baker, Gale and Hitford analyzed different courses in different distance learning environments. They obtained their data by analyzing meta-analytical reviews of different studies and concluded that distance learners, as well as on-campus learners benefit from the range of elements comprising the learning environment, especially educational technologies.

The factors for which there were significant differences ($p < .05$) were:

- **Age of learner** - Learners in off-campus lecture sections were older than those in on-campus sections; and learners in telecourse sections were intermediate in age when compared to the other sections.

  These results agree with those of other studies in that the off-campus learners were older than those on-campus. One study (Levine, Gallagher, Boccutti, & Meyer, 1992) reported that, in particular, the average age for a telecourse learner was 33 years, which is older than the average age (26 years) for telecourse learners in the present study. This may be explained in part, by the finding that the average age of telecourse learners in this study was neither higher nor lower than for the other two learning environments.

- **Semesters of continuous enrollment** - Learners in off-campus lecture sections had fewer semesters of continuous enrollment than did those in on-campus lecture sections; and learners in telecourse sections were intermediate in enrollment continuity when compared to the other sections.
The intention of this comparison was to describe patterns indicative of the stop-start nature of college enrollment patterns common to many adult learners. Many traditional students, depending on their year in college would be expected to have a continuous pattern of enrollment, but a sophomore would not be expected to have a large number of semesters of continuous enrollment.

Conversely, many non-traditional students would be expected to have gaps in enrollment, which may be indicative of a change in their lives. Both of these patterns could be seen upon looking at the records and comparing them with date-of-birth data. The particular measure for this study did not discern these patterns because there was no way to quantify semesters of enrollment with large gaps using this measurement. Recognizing enrollment patterns is important in working with non-traditional learners. Kember's Open Learning model for distance education (Kember, 1989) is based on assumptions of learners exhibiting a pattern of stop-start education, but there are numerous inputs, beyond the scope of the present study, that develop the whole picture.

- Number of credit hours carried - Learners in off-campus sections carried fewer credit hours than did those in either on-campus or telecourse sections.

The on-campus and telecourse sections may have provided opportunities for non-traditional learners to carry more credit hours than the off-campus sections because learners could combine the convenience of
telecourses and the wider variety of courses offered on-campus (day or night). Other investigators have found similar courseload patterns (Guernsey, 1998; Wallace, 1997). These results may indicate that telecourses help build enrollments while accelerating the degree progress (Levine, et al., 1992), while meeting the missions of a Land-Grant Research University.

• Learner's college of enrollment - The numbers of learners in off-campus and telecourse sections were higher than would be expected due to chance for learners enrolled in the Evening School PASS program, and fewer than would be expected for Junior Division and Senior Colleges. The number of learners in on-campus sections was lower than would be expected due to chance for ES PASS program participants and higher than would be expected for Junior Division and Senior Colleges.

The lower number of PASS program participants in the on-campus course sections is most likely an artifact of the study design. All Evening School sections of the course were examined and thus the on-campus sections were night classes. PASS program participants may take day courses as well as night courses and determining the proportion of day-to-night courses taken by any learner group was outside the scope of this
study. Learners who have been admitted and enrolled in Junior Division and Senior Colleges may have taken non-Evening School sections of the course at night or during the day.

Conclusions and Recommendations

Objective One conclusions. The majority of learners were white single, women. Learners in the study course were similar on all of the measured academic characteristics. The learners in the study were frequently enrolled as part-time students; and a substantial number of learners enrolled in the study course were regularly enrolled Junior Division or Senior College students at the university.

Finally, though standardized test scores have been found to be predictors of success in other studies, they were less useful in this study because a substantial number of learners had not submitted ACT scores at the time of the study, for a variety of reasons.

Objective One recommendations. The Evening School may try to attract more male learners and non-white learners to courses offered through this school. This may be approached as improved or more far-reaching outreach programs as well as more focused needs assessments. Additionally, the Evening School may try to develop different predictors of learner success, either through research or by adapting and validating currently available information to generate predictors aimed at underserved populations of learners. Finally, the Evening School may want to increase tracking of learners
who take additional courses offered through the school, as well as those who take no further courses or drop out for period longer than a year. This would help in planning course sequences, off-campus course locations, and effective outreach materials.

**Objective Two conclusions.** Sections of the subject course all met in the evening, one or more times per week or, for telecourses, five times per semester. All class meetings were in three-hour blocks. All three instructors supplied a syllabus to learners in each of their course sections; and these varied widely in the degree of detail regarding course requirements and meeting times provided. Finally, the majority of learners pre-registered for the subject course.

**Objective Two recommendations.** The Evening School should conduct pilot tests of the extent to which a requirement that instructors who teach Evening School sections of courses provide detailed syllabi for both on-campus and distance learning sections of their courses. This may be accomplished with help from the Evening School staff if an instructor wishes; syllabus information could be included in information packages learners would receive upon enrollment in Evening School courses. Another recommendation is that the Evening School may make effective use of pre-registration enrollment information by conducting studies of possible registration date patterns for courses. This information would be useful in tailoring registration processes or providing timely information to enable more effective allocation of instructional
resources and outreach activities for learners who enroll in Evening School courses.

**Objective Three conclusions.** The learners' perceptions of overall course and instructor quality, as well as availability of the instructor for student contact showed positive perceptions on all counts. A majority of learners in the course sections for which learner perception data were available completed the survey instrument.

**Objective Three recommendations.** The Evening School should review their course evaluation procedures to identify a way to get more complete information, higher response rates, and provide more information benefiting learners, instructors and the institution.

**Objective Four conclusions.** The first set of traditional learning outcome measurements, grades and GPAs for the semester of enrollment in the course, have been discussed in Objective One. The second set of traditional outcomes were subject area-specific GPAs for learners taking related courses, and overall GPA for all learners in the study at the end of two semesters enrollment in the course. These academic characteristics were also similar for all learners in the study course. The overall GPA after 2 semesters was similar to that for the semester of enrollment in the course; which may indicate that the learners were not disadvantaged in the sense of grade achievement as a result of taking this course.
Objective Five conclusions. Grades and GPAs were similar for all learning environments, which is consistent with findings of other studies comparing grades with learning environments. Learners in off-campus course sections were older than those in on-campus sections, they carried fewer credit hours in the semester in which they took the course, and they had fewer semesters of continuous enrollment. Learners in telecourse sections also carried more credit hours than those in off-campus sections. In age and semesters of continuous enrollment, telecourse learners were similar to both on-campus and off-campus learners.

The data regarding number of learners from different schools/colleges enrolled in course sections representing different learning environments showed higher than expected (due to chance alone) numbers of PASS students in off-campus and telecourse sections. There were also lower than expected numbers of PASS students in on-campus course sections, and higher than expected numbers of Junior Division or Senior College students.

Objective Five recommendations. The Evening School should study methods of tracking learners' semesters of continuous enrollment according to the learning environment in which courses were offered. The purpose of these studies would be to determine whether learners exhibit different patterns of start-stop enrollments based on learning environments. This added dimension to a tracking system would be useful in prioritizing instructional and technological resources for both on-campus courses and distance learning.
courses, prioritizing uses of multiple technologies and matching learning environments which include technologies to the groups of learners who are likely to use them. The multi-level tracking design may also provide benchmarks for helping Evening School meet the needs of the whole spectrum of its present and potential learners.

Additionally, further studies are needed to determine the characteristics of non-Evening School learners who take Evening School courses. There may be learners in other schools/colleges who are non-traditional learners or Evening School learners whose needs are more like traditional learners. The results of such studies would be useful to maximize the effectiveness of Evening School outreach services and resource allocations.

A related recommendation is that further studies are needed to evaluate the learning environments used in this study for other courses, and to evaluate additional learning environments with respect to whether the needs of diverse learner populations are met. These studies would help determine whether the Evening School is offering courses and course sequences in learning environments appropriate in type and number to meet the needs of different groups of learners.

Finally, the Evening School should perform pilot tests of high-demand courses in a variety of learning environments. These could include offering telecourses with meetings at off-campus locations, adding communications technologies such as internet or e-mail to learning environments in order to
reduce the transactional distance between the Evening School and its off-campus learners, or adding similar outreach facets to courses offered on-campus.
References


Boyer, E. L. (1994, Fall) How do we talk about higher education’s relationship to the schools? Metropolitan Universities, 5(2), 7-15


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Kember, D. (1989). An illustration, with case studies, of a linear process model of drop-out from distance education. Distance Education, 10(2) 196-211.


Staff, Institute for Distance Education. (1996). *A conceptual planning tool developed by the University of Maryland System Institute for Distance Education*. University of Maryland University College, College Park, Maryland. Available on-line at: (http://www.umuc.edu/ide/modlmenu.html).


Appendix A: Three General Models of Distance Education
<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
<th>Model B - Independent Learning</th>
<th>Model C - Open Learning + Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model A - Distributed Classroom</td>
<td>Interactive telecomm. Technologies extend classroom-based course from one location to more locations; typical result is extended &quot;section&quot; mixing on-site and distant students.</td>
<td>Frees students from specific place &amp; time. Course materials: course guide, syllabus, access to faculty for guidance, questions, and evaluation. Student-Instructor contact by: telephone, computer conf., e-mail, regular mail.</td>
<td>Uses printed course guide and other media (videotape, computer disk). Allows student to study at own pace; includes occasional use of interactive telecomm. Technologies for meetings among students.</td>
</tr>
<tr>
<td>Characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- students & faculty meet in set places and times (min. weekly)
- number of sites varies from two (point-to-point) to 5+(point-to-multipoint); greater number of sites means greater complexity - technically, logistically, perceptually
- students enroll at sites convenient to them
- small numbers of students in each location
- experience mimics classroom for instructor and student
- no class sessions; students study by following syllabus
- students may interact with instructor & sometimes other students
- content presented through print, disk, or videotape; students can choose review place/time
- course materials used for years; result of structured development process involving designers, content experts, media specialists
- course content presented using print, disk, or videotape; students choose place/time for review, alone or in groups
- course content materials used for one+ semester; often specific to the instructor (lecture video) students meet in groups for instructor-led class w/ interactive technol. to discuss, clarify concepts, do group prob-solving activities, other applied learning exercises.

(table con’d.)
<table>
<thead>
<tr>
<th>Models</th>
<th>Model A - Distributed Classroom</th>
<th>Model B - Independent Learning</th>
<th>Model C - Open Learning + Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Role/Experience</td>
<td>faculty typically don't change traditional role, technology use requires adaptable presentation must reduce amt.of material for more time for relational tasks, technol. mgmt. · faculty find it necessary to increase amount of planning time for each class; increases instructor confidence, reduces stress</td>
<td>faculty structures and facilitates learning, shares control with student · must become familiar with print and other materials before semester begins, needs detailed syllabus, plan for effective use of interactive technol. tutors individual students available to facilitate learning, free from preparing content for class sessions</td>
<td>faculty structures and facilitates learning, shares control with student role change lets faculty focus on process, take advantage of media in print &amp; other materials, plan interactive sessions, tutors individual students; available to facilitate indiv. learning, free from preparing content for class sessions</td>
</tr>
</tbody>
</table>

| On-Site Students' Experience | Faculty member is physically present, students may be less tolerant of technol. problems, unlikely to perceive benefit from technology · may resent "sharing" class with other sites | students don't attend class, responsible for organizing work/time to meet course requirements · students must be motivated; need good time mgmt. Skills, writing ability, initiative, high standards | fewer class sessions, on-site & distant students gain flexibility · periodic classes help students structure work, requires more student discipline than one with frequent sessions · sessions reduce perceived 'distance' |

(table con’d.)
<table>
<thead>
<tr>
<th>Models</th>
<th>Model A - Distributed Classroom</th>
<th>Model B - Independent Learning</th>
<th>Model C - Open Learning + Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-Site Students' Experience</td>
<td>may feel cut off from the &quot;real&quot; class · form close working group with students at site find experience different from face-to-face class. · tolerant of technol. problems if perceived personal benefit</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Technologies Supporting Class Sessions</td>
<td>· two-way interactive video · one-way video with two-way audio, · audioconf. · audiographic conf.</td>
<td>· no class sessions</td>
<td>two-way interactive video · one-way video with two-way audio, · audioconf. · audiographic conf.</td>
</tr>
<tr>
<td>Technologies Supporting Out-of-Class Communication</td>
<td>· telephone · mail · fax · computer (for e-mail, conference; library access, submit assignments)</td>
<td>· mail · telephone · voice-mail · computer (for e-mail, conference; library access, submit assignments)</td>
<td>· telephone · mail · computer (for e-mail, conference; library access, submit assignments)</td>
</tr>
</tbody>
</table>

(table con'd.)

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<table>
<thead>
<tr>
<th>Models</th>
<th>Model A - Distributed Classroom</th>
<th>Model B - Independent Learning</th>
<th>Model C - Open Learning + Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities for Interaction</td>
<td>- all students interact with instructor and each other; on-site students see instructor and other students in class; off-site students may see instructor and other students; depending upon technology used on-site students interact with instructor before and after class; other interaction by telephone; computer conferencing, voice-mail</td>
<td>- instructors provide syllabus; includes how and when students can contact them; wide variation in the amount of student-initiated communication - instructors provide detailed comments on students' assignments - if voice-mail or computer conf. is available, instructors provide structure by posing topics or stimulus for discussion</td>
<td>- all class sessions are designed for interaction with instructor and other students; frequent problem-solving sessions, because time not devoted to lecture - individual interaction between students and faculty member on an as-needed basis by telephone, mail, e-mail, or voice-mail</td>
</tr>
<tr>
<td>Support Services Needed</td>
<td>- tech. Support at each location; tech./trouble-shooter at origination site - assistant at each location for logistics, materials distribution/collection - access to fax machine, telephone, photocopier</td>
<td>- significant admin. Structure crucial to support students and instructors - exam proctor system needs flexibility but must also meet institutional needs for exam security</td>
<td>- tech. Support at each location; tech./trouble-shooter at origination site - assistant at each location for logistics, materials distribution/collection - access to fax machine, telephone, photocopier</td>
</tr>
</tbody>
</table>

Source: Staff. University of Maryland System Institute for Distance Education. (1996).® (permission granted)
Appendix B: Copyright Release
Anne –

You have permission to cite the table. I'm glad you have found it useful.

Kay Gilcher

On Wed, 18 Feb 1998, Anne Zoeller wrote:

> I downloaded a table from your Whitepaper (1996), Three General Models of Distance Education, from A Conceptual Planning Tool developed by the University Of Maryland System.
> Source: www.umuc.edu/ide/modlmenu.html
> I have referred to the above-mentioned whitepaper often while developing my dissertation. I would like to include that table in my dissertation, but I need permission to use copyrighted material. I will use the proper citation, copyright symbol and "permission granted" if I to get your permission to use the table.
> I am a crabby doctoral candidate at Louisiana State University in Baton Rouge. I am also the Distance Learning Coordinator for the LSU Evening School. My defense date is March 26. My 8yr old son keeps trying to 'help' me. Do any of you find it hard to even put the words lifelong and education together in your mind (yeah, I know it's lifelong learning) without getting a case of the heebie jeebies?
> Thank you for your help. Happy Mardi Gras. Anne Zoeller

> From: Anne Zoeller
> poliakoff-zoeller@worldnet.att.net
> ************************************************

Kay Gilcher
Asst VP and Director, Distance Education and Media
Office of Instructional Development
University of Maryland University College
University Blvd @ Adelphi Road
College Park, MD 20742
phone 301-985-7777  fax 301-985-7845
************************************************
I. Course title and number:
   Introduction to Psychology
   Psychology 2000

II. Instructor: #1

III. Textbook:
   Additional readings may be assigned

IV. Assessment will be based on performance on four exams, each will determine 25% the course grade. Letter grades will be assigned as follows: A = 90 - 100, B = 80 - 89, C = 70 - 79, D = 60 - 69, F = < 60.

V. Tentative Course Outline (topics and assignments may be adjusted to accommodate student needs)

1st quarter - History and Paradigms of Psychology, cpt. 1
   Methods of Psychological Research, cpt. 2

2nd quarter - Biological basis of behavior/
   Psychopharmacology, cpt. 3
   Sensation and Perception, cpts. 4 & 5

3rd quarter - Learning, cpt. 6
   Memory, cpt. 7
   Intelligence, cpt. 13

4th quarter - Developmental Psychology, cpt. 10
   Abnormal Psychology, cpts. 15 & 16
General Information

Instructor: #2
Office:
Office Phone:
EMAIL:
Address:

Text


Course Meeting Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/23</td>
<td>Orientation Meeting</td>
</tr>
<tr>
<td>2/20</td>
<td>Group Activities &amp; Review for Midterm</td>
</tr>
<tr>
<td>3/6</td>
<td>Midterm Exam</td>
</tr>
<tr>
<td>4/17</td>
<td>Group Activities &amp; Review for Final</td>
</tr>
<tr>
<td>5/8</td>
<td>Final Exam</td>
</tr>
</tbody>
</table>

Class attendance is required. No make-up exams will be given. Smoking, eating, and drinking are prohibited in the classroom.

Getting Help

At any time that you are confused, need help with an assignment, etc. you have several options:

1. call the instructor,
2. send an EMAIL message to the instructor at her logonid,
3. call and make an appointment,
4. send the instructor a note through campus or U.S. mail,
5. contact a fellow classmate.
## Broadcast Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16</td>
<td>No Class - Holiday</td>
<td>--</td>
</tr>
<tr>
<td>1/23</td>
<td>No TV Episodes</td>
<td>Orientation Meeting</td>
</tr>
<tr>
<td>1/30</td>
<td>TV Episodes Begin</td>
<td>Past, Present &amp; Promise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Understanding Research</td>
</tr>
<tr>
<td>2/6</td>
<td>The Behaving Brain</td>
<td>Pp. 55-101</td>
</tr>
<tr>
<td>2/13</td>
<td>The Developing Child</td>
<td>Pp. 135-153 &amp; 161-177</td>
</tr>
<tr>
<td>2/20</td>
<td>Sensation and Perception</td>
<td>Pp. 213-299</td>
</tr>
<tr>
<td>2/27</td>
<td>Remembering and Forgetting</td>
<td>Pp. 341-377</td>
</tr>
<tr>
<td>3/6</td>
<td>Judgment and Decision Making</td>
<td>Pp. 410-420</td>
</tr>
<tr>
<td>3/13</td>
<td>The Mind Awake and Asleep</td>
<td>Pp. 104-133 &amp; 179-211</td>
</tr>
<tr>
<td>3/20</td>
<td>The Self</td>
<td>Pp. 507-537 &amp; 439-449</td>
</tr>
<tr>
<td>4/3</td>
<td>Maturing and Aging</td>
<td>Pp. 179-211 &amp; 614-615</td>
</tr>
<tr>
<td>4/17</td>
<td>Psychopathology</td>
<td>Pp. 617-659 &amp; 661-703</td>
</tr>
<tr>
<td></td>
<td>A Union of Opposites</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>New Directions</td>
<td>None</td>
</tr>
</tbody>
</table>

Please note: Two episodes are broadcast each Monday from 1/30 through 4/24, including the Mardi Gras holidays and Spring Break. All episodes will be shown on LPB Channel 27 (Cablevision Channel 12) from 11 p.m. to midnight on Mondays. If you are not a night person, set your VCR to tape the episodes. Additionally, copies of each night's airings are on reserve in the Listening Room of Middleton Library.

## Course Requirements and Evaluation

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Percentage</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Discussion</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Project #1</td>
<td>20%</td>
<td>2/20/95</td>
</tr>
<tr>
<td>Midterm</td>
<td>25%</td>
<td>3/6/95</td>
</tr>
<tr>
<td>Project #2</td>
<td>20%</td>
<td>4/20/95</td>
</tr>
<tr>
<td>Final</td>
<td>25%</td>
<td>5/3/95</td>
</tr>
</tbody>
</table>
To decrease the interval between when exams are taken/projects are turned in and when grades are received, the instructor will mail grades and/or projects back to students as soon as they are graded. This will require, however, that you give the instructor a current address for this purpose. The address will not be given out to others. Also, final exams will not be returned. You may pick them up from the instructor after January 1, 1996.

Class Discussion

Following the broadcast of each set of episodes for the week the instructor will place a discussion question on the electronic bulletin board PSYC2000 for discussion by all students. Students can logon using their TIGER logonid and respond to the question presented. The discussion will operate much like a live discussion in class. All students can read and respond to all other students' responses. 10% of your final grade will be based on discussion by this medium and your participation in the class meetings. If you do not have a computer and/or modem of your own at home or at work, you can use one of the computers here on campus.

During class meetings two and four we will review for the exams and engage in group activities designed to reinforce the text and TV information.

Exams

The midterm and final will be objective in nature. No essay or true-false questions will be used. Only multiple choice and identification items will be included. The final is NOT comprehensive. Exams will cover the videotaped lectures, the text, and any materials presented in class meetings.

Projects

Each student will complete two projects from the following list. Students may choose any two projects that they wish. One project is due at the second class meeting; the other project is due at the fourth class meeting. The projects are designed to apply the knowledge acquired in class and in the episodes.

List of Projects

a. Participate in a psychological study as a subject. Write a report on your experiences. (Maximum: 5 pages.)
b. Interview a psychologist and report on your experience in writing. (Maximum: 5 pages.)
c. Abstract at least five articles that have appeared in psychological journals since 1990. Each abstract should briefly summarize the article and critique it. (Maximum: 1 page per abstract.)
d. Visit a facility offering some type of psychological services. Write a report on your visit. (Maximum: 5 pages.)
e. Read and critically review a classic or contemporary book in the field of psychology. Compare and contrast the ideas presented in the book to those in the text and/or episodes. (Maximum: 5 pages.)
f. Collect a series of cartoons that illustrate psychological concepts. Label the cartoons.
g. Attend a workshop or convention in the field of psychology and write about your experiences. (Maximum: 5 pages.)
h. Take a psychological test, read about it in the literature, and report on both. (Maximum: 5 pages.)
i. Interview your parents about your own development as a child. Identify parenting techniques they used. (Maximum: 5 pages.)
j. Observe two different age groups of children at a daycare center or school. What similarities and differences do you note? (Maximum: 5 pages.)
k. Interview an elderly person. Do a life review with them. Write it up. (Maximum: 5 pages.)
l. Have someone blindfold you and lead you about campus. Note the difficulties you had moving and navigating your usual steps. How relaxed or tense were you? Write about your experiences. (Maximum: 5 pages.) [You might also choose to wear cotton in your ears for a day or to spend the day in a wheelchair.]
m. Design your own behavior change program based on the learning principles described in the book. Set a goal, identify strategies for reaching the goal, and design an evaluation measure. (Maximum: 5 pages.)
n. Without looking, try to sketch all the features on the front and back of a dollar bill. Make the sketch as detailed as possible. Evaluate your sketch for accuracy. Report on your experiences, including your drawings. (Maximum: 5 pages.)
o. Go to a busy intersection (e.g. Highland at Dalrymple) and observe pedestrian street-crossing behavior as well as driving behavior. Observe the kinds of risks people take. Report on your results. (Maximum: 5 pages.)
p. Keep a daily record of what you eat and drink for three days, noting where, when, and with whom you eat. Was your eating a response to physical hunger? What other factors influenced you eating behavior? What patterns emerged from your eating? (Maximum: 5 pages.)
q. Keep a pad and pencil by your bed and start a dream journal. Just before you fall asleep, remind yourself to remember your dreams. Immediately upon awakening, record what you remember. Does your ability to recall your dreams improve over time? Does your recall become more vivid or more organized? Are there common themes, people, or symbols to your dreams? Can you shape your dreams by telling yourself at bedtime what you want to dream about? (Maximum: 5 pages.)
r. Create a file of newspaper clippings related to topics in this course.
s. Analyze a TV commercial in the terms discussed in the text.
t. Analyze the strategies employed in a recent political election.
u. Create your own project!
General Information

Instructor: #2
Office:
Office Phone:
EMAIL:
Address:

Text


Course Meeting Dates

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<td>Orientation Meeting</td>
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<td>Group Activities &amp; Review for Midterm</td>
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<td>Midterm Exam</td>
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<tr>
<td>4/15</td>
<td>Group Activities &amp; Review for Final</td>
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<td>5/6</td>
<td>Final Exam</td>
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Class attendance is required. No make-up exams will be given. Smoking, eating, and drinking are prohibited in the classroom.

Getting Help

At any time that you are confused, need help with an assignment, etc. you have several options:

1. call the instructor
2. send an EMAIL message to the instructor at her logonid.
3. call and make an appointment,
4. send the instructor a note through campus or U.S. mail,
5. contact a fellow classmate.
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<td>Past, Present &amp; Promise</td>
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<td>Understanding Research</td>
<td>Pp. 27-53</td>
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<td>The Responsive Brain</td>
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<td>Pp. 135-153 &amp; 161-177</td>
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<td>Pp. 153-160</td>
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<td>Pp. 422-439 &amp; 449-472</td>
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Please note: Two episodes are broadcast each Tuesday from 1/23 through 4/16, including the Mardi Gras Holidays and Spring Break. All episodes will be shown on Cablevision Channel 18, from 3:30 to 4:30 p.m. on Tuesdays. If you are not at home to watch an episode live, set your VCR to tape the episodes. Additionally copies of each airing are on reserve in the Listening Room of Middleton Library.
Course Requirements and Evaluation

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To decrease the interval between when exams are taken/projects are turned in and when grades are received, the instructor will mail grades and/or projects back to students as soon as they are graded. This will require, however, that you give the instructor a current address for this purpose. The address will not be given out to others. Also, final exams will not be returned. You may pick them up from the instructor after January 1, 1997.

Class Discussion

Following the broadcast of each set of episodes for the week the instructor will place a discussion question on the electronic bulletin board PSYC2000 for discussion by all students. Students can logon using their TIGER logonid and respond to the question presented. The discussion will operate much like a live discussion in class. All students can read and respond to all other students' responses. 10% of your final grade will be based on discussion by this medium and your participation in the class meetings. If you do not have a computer and/or modem of your own at home or at work, you can use one of the computers here on campus.

During class meetings two and four we will review for the exams and engage in group activities designed to reinforce the text and TV information.

Exams

The midterm and final will be objective in nature. No essay or true-false questions will be used. Only multiple choice and identification items will be included. The final is NOT comprehensive. Exams will cover the videotaped lectures, the text, and any materials presented in class meetings.

Projects

Each student will complete two projects from the following list. Students may choose any two projects that they wish. One project is due at the second class meeting; the other project is due at the fourth class meeting. The projects are designed to apply the knowledge acquired in class and in the episodes.
List of Projects

a. Participate in a psychological study as a subject. Write a report on your experiences. (Maximum: 5 pages.)
b. Interview a psychologist and report on your experience in writing. (Maximum: 5 pages.)
c. Abstract at least five articles that have appeared in psychological journals since 1990. Each abstract should briefly summarize the article and critique it. (Maximum: 1 page per abstract.)
d. Visit a facility offering some type of psychological services. Write a report on your visit. (Maximum: 5 pages.)
e. Read and critically review a classic or contemporary book in the field of psychology. Compare and contrast the ideas presented in the book to those in the text and/or episodes. (Maximum: 5 pages.)
f. Collect a series of cartoons that illustrate psychological concepts. Label the cartoons.
g. Attend a workshop or convention in the field of psychology and write about your experiences. (Maximum: 5 pages.)
h. Take a psychological test, read about it in the literature, and report on both. (Maximum: 5 pages.)
i. Interview your parents about your own development as a child. Identify parenting techniques they used. (Maximum: 5 pages.)
j. Observe two different age groups of children at a day care center or school. What similarities and differences do you note? (Maximum: 5 pages.)
k. Interview an elderly person. Do a life review with them. Write it up. (Maximum: 5 pages.)
l. Have someone blindfold you and lead you about campus. Note the difficulties you had moving and navigating your usual steps. How relaxed or tense were you? Write about your experiences. (Maximum: 5 pages.) [You might also choose to wear cotton in your ears for a day or to spend the day in a wheelchair.]
m. Design your own behavior change program based on the learning principles described in the book. Set a goal, identify strategies for reaching the goal, and design an evaluation measure. (Maximum: 5 pages.)
n. Without looking, try to sketch all the features on the front and back of a dollar bill. Make the sketch as detailed as possible. Evaluate your sketch for accuracy. Report on your experiences, including your drawings. (Maximum: 5 pages.)
o. Go to a busy intersection (e.g. Highland at Dalrymple) and observe pedestrian street-crossing behavior as well as driving behavior. Observe the kinds of risks people take. Report on your results. (Maximum: 5 pages.)
p. Keep a daily record of what you eat and drink for three days, noting where, when, and with whom you eat. Was your eating a response to physical hunger? What other factors influenced your eating behavior? What patterns emerged from your eating? (Maximum: 5 pages.)
q. Keep a pad and pencil by your bed and start a dream journal. Just before you fall asleep, remind yourself to remember your dreams. Immediately upon awakening, record what you remember. Does your ability to recall your dreams improve over time? Does your recall become more vivid or more organized? Can you shape your dreams by telling yourself at bedtime what you want to dream about? (Maximum: 5 pages.)
r. Create a file of newspaper clippings related to topics in this course.
s. Analyze a TV commercial in the terms discussed in the text.
t. Analyze the strategies employed in a recent political election.
u. Create your own project!
2000— Introduction to Psychology

Instructor: #3  Office hours: Monday, 9:30-12:00
Office: or by appointment

Course summary: This course is an introduction to psychology. You will be responsible for lecture material as well as readings. For each unit, you will be given a set of objectives, which will outline specific aspects of reading and lecture that you are expected to know for the quizzes and for the tests. The student is responsible for knowing changes in the schedule that were discussed during class periods.


Grading: There will be 12 quizzes, only 10 of which will count toward your grade. Because only 10 quizzes count toward your grade, there will be absolutely no makeups. The reason I allow you to drop 2 quiz scores is because you may need to miss due to family tragedy, religious holiday, test overload, illness, participation in athletic events, or any other reason. Quizzes will be worth 15 points each and will be very brief (fill in blank, T/F, etc). We will grade the quizzes in class as part of the learning process. There will be one comprehensive multiple choice midterm exam (100 pts), and one comprehensive multiple choice final exam (100 pts).

Total points=300.  A>270; B>240; C>210; D>180; F<180

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<td>Learning</td>
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Appendix D: Records Screens for the LSU IMS Database
ORGANIZATIONS  PF1

CALENDAR  PF2

CODE TABLES  PF3

COURSE INFORMATION  PF4

STUDENT INFORMATION  PF5

DEGREE AUDIT MENU  PF10

SYSTEM MENU  PF11

LOGOFF  PF12
STUDENT INFORMATION MENU 03/03/98 12:25 FORM B

STUDENT NBR  LAST NAME  FIRST NAME  MIDDLE  SUFF
STUDENT: 666-66-6666  SAM  YOSEMITE

ENTER FUNCTION ===> VSEM  (PRECEDED BY "U" TO UPDATE OR "V" TO VIEW ONLY)

AAC  ACADEMIC ACTION  DNU  UGRAD DIAGNOSTIC  SCH  SCHEDULE (V)
ACA  ACADEMIC RECORD  DOS  DEAN OF STUDENTS (U)  SEM  ENROLL BY SEM (V)
ACT  ACTIVITY  EXM  EXAMS  SRQ  SCHEDULE REQUESTS
ADR  ADDRESS  FEE  FEE BILL (V)

SUPPLEMENTS

ATH  ATHLETE COURSES  GPG  GRAD DEGREE PROG  SUM  TERM SUMMARIES (V)
BIO  BIOGRAPHICAL  INT  INTERNATIONAL  SUP  SUPPLEM. CR HRS
CAA  COLG ACAD ACT.  KEY  KEY  TFS  TRANSFER SUMMARY
CAN  CANDIDATES  LET  LETTERS (U)  TRM  TERM
COM  COMMENT  LOG  TRANSACTION LOG (V)  TRN  TRANSCRIPTS (U)
CRS  COURSE (V)  NTE  N.T.E.  TTL  TITLES
CUR  CURRENT SCHEDULE  PGM  DEGREE PROGRAM  VET  VETERANS (U)
DEG  DEGREES  POI  PROOF OF INSURANCE  WAV  WAIVERS
DNG  GRAD DIAGNOSTIC  PRT  DOCUMENT PRINT (V)  WDR  WITHDRAWAL (U)

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TYPE  CARRIED  EARNED  QPTS  GPA  
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58.00  73.33  232.00  4.000  

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Next Function =>
Course Information Menu

Function ==> vcst  Term ==> 2s/1998  Dept ==> XXXX  Crs ==> 0000  Sec ==> 000

Course Information Functions
(Precede Function With "U" To Update Or "V" To View)

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Crs Title : LOVE OF XXXX

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*ES #ACCESS @PI/PQ TOTALS: 1627

Function == VCST Term == 2S/1998 Dept == XXXX Crs == 0000 Sec == 1

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COURSE SECTION 03/03/98 12:23 FORM I

Crs Title : LOVE OF XXXX

Last Update: 02/06/1998

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Sec Enrlment: 27 Location Code : 3I Add Date : 09/10/1997
Sec Maximum: 30 Shared Instr :
Enrl Maximum: 30 Booklet Print : P Begin Date: 09/10/1997
Crs Cred Hrs: 3.0 Telephone Flag: Curriculum:
Sec Title : Spec Enrl :
Sec Status:
Add Date : 09/10/1997

LEC 3.0 600 900 N T GONZALES

Days Room Building S25 Code

Type SSN Hrs Instructor
LEC 123-45-6789 3.00 HOFFA, J

Remarks: CLASS TAUGHT AT EAST ASCENSION HIGH SCHOOL, RM 102

Function ==> VSEC Term ==> 2S/1998 Dept ==> XXXX Crs ==> 0000 Sec ==> 007

PF2=SRRMENU PF3=SRRMCRS PF10=PREV PF11=NEXT

172
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Function ==> VROS  Term ==> 2S/1998  Dept ==> VED  Crs ==> 0000  Sec ==> 000
Appendix E: Survey Instrument
INSTRUCTIONS TO RESPONDENTS

This form is designed to assess teaching and learning in college classes. There are three parts to the instrument. Part I asks questions about teaching, learning and course characteristics. Part II asks about the type of learning in the course. Part III asks for overall evaluations of the course and additional comments.

DIRECTIONS: Part I
Enhancement of Student Learning

Three scale points are provided for each item. Read each item carefully and then select the one scale point which best reflects your judgement about the teaching/learning or course characteristic.

The three scale points that follow must be read carefully before completing the assessment form. Refer to these scale point descriptions as you read and score each item.

1 = Learning NOT Enhanced

2 = Learning SOMETIMES Enhanced

3 = Learning ALMOST ALWAYS Enhanced

PLEASE CAREFULLY READ AND SCORE EACH ITEM INDEPENDENTLY. That is, try not to let your response to one item influence your response to the next item.

All responses are strictly confidential. You do not need to sign your name anywhere on this instrument.
Student Assessment of Teaching and Learning

This form is to be used by students to assess the quality of teaching and learning and other course-related factors. Use a #2 Pencil only in completing your response to each item.

PART I: ENHANCEMENT OF STUDENT LEARNING

DIRECTIONS: Please carefully reflect upon your experiences as a learner in the course you are evaluating, read each item carefully, and bubble in one scale point that best reflects your assessment of the teaching/learning and/or course characteristic. This part requests that you do more than rate the instructor. Instead, consider the degree to which each item enhanced your learning as a student. Use the scale provided below in assessing each item.

SCALE
1 = Learning NOT Enhanced
2 = Learning SOMETIMES Enhanced
3 = Learning ALMOST ALWAYS Enhanced

1. Clarity with which the course objectives are communicated
2. Clarity with which student responsibilities and expectations are explained
3. Use of class time
4. Outside assignments and integration of outside assignments with other course activities
5. Teaching and learning techniques used during the course
6. The instructor’s enthusiasm for teaching, learning and the subject taught
7. The interpersonal climate in the classroom (e.g., patience, courtesy, respect)
8. Encouragement for students to express their own ideas
9. Encouragement for students to participate in discussions
10. Clarity and understandability of the instructor’s speech
11. Directions and explanations given for course content
12. The kind and number of thought-provoking questions asked
13. The extent to which students are encouraged to compare and contrast ideas
14. The extent to which students are involved in discussions among themselves
15. The extent to which students learn from one another
16. The degree to which the instructor helps students organize understanding and understand relationships among various topics
17. Explanation(s) given for difficult material/ideas
18. Encouragement for students to ask questions
19. Clarification of content/ideas when confusion exists
20. Feedback about learning provided during teaching and learning activities
21. The extent to which adjustments are made in a lesson when needed
22. The degree to which students are encouraged to apply course content to solve problems or to understand real life situations
23. The quantity/quality of feedback provided on graded work
24. The quantity/quality of feedback provided on tests given
25. The extent to which students are provided opportunities to determine their progress in the course

PART II: TYPES OF LEARNING

DIRECTIONS: Use the four-point scale below to evaluate the degree to which each type of learning is emphasized in this course. (DO NOT rate how much you have learned ...Only the amount of emphasis given to each type of learning).

1 = No emphasis
2 = Some emphasis
3 = Much emphasis
4 = Very much emphasis

Rate the emphasis placed on each type of learning listed below:

26. learning factual information
27. developing concepts
28. understanding and applying principles and rules
29. understanding and applying theories
30. critical analysis and/or problem solving
31. creative thinking
32. developing knowledge of self and others
33. developing professional, career, and job-related skills
34. developing written communication skills
35. developing oral communication skills

PART III: OVERALL COURSE EVALUATION

DIRECTIONS: Use the 100-point scale provided below and pencil in the appropriate spaces in "tens" and "ones" that best reflect the numerical grade you would give this course for each of the three items that follow.

SCALE

A = 90 - 100
B = 80 - 89
C = 70 - 79
D = 60 - 69
F = Below 60

36. How would you grade the quality of teaching in this course?
Tens
Ones

37. What was the contribution of the course to your personal learning?
Tens
Ones

38. How would you grade this course overall?
Tens
Ones
### DEMOGRAPHIC INFORMATION

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<td>Do you work full time?</td>
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<td>Do you take classes:</td>
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<td>during the evening</td>
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Directions: Please respond to each of the following items by filling in the number that best reflects your opinion about each question.

1. How much effort did you put forth in this course to enhance your own learning?
   - Little or None: 1
   - Some: 2
   - A Large Amount: 3

2. When there were difficult or uncertain obstacles to overcome in learning/achieving in this course, how much effort and persistence did you put forth to enhance your own learning?
   - Little or None: 1
   - Some: 2
   - A Large Amount: 3

3. If you were repeatedly failing in this course, how much effort and persistence would you put forth to continue to enhance your own learning?
   - Little or None: 1
   - Some: 2
   - A Large Amount: 3

4. How much knowledge and/or ability do you think you have to accomplish your learning objectives in this course?
   - Little or None: 1
   - Some: 2
   - A Large Amount: 3

5. How much personal responsibility do you think you have to accomplish your learning objectives in this course?
   - Little or None: 1
   - Some: 2
   - A Large Amount: 3

6. To what extent do you believe your efforts can accomplish the learning objective of this course?
   - Not at All: 1
   - Somewhat: 2
   - To a Large Extent: 3
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<thead>
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<th>Number</th>
<th>Statement</th>
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<tbody>
<tr>
<td>1</td>
<td>In this class, I make friendships with other students.</td>
</tr>
<tr>
<td>2</td>
<td>I know other students.</td>
</tr>
<tr>
<td>3</td>
<td>I do favors for members of this class.</td>
</tr>
<tr>
<td>4</td>
<td>Students help me with my learning.</td>
</tr>
<tr>
<td>5</td>
<td>I help other class members who are having trouble with their work.</td>
</tr>
<tr>
<td>6</td>
<td>In this class, I am able to depend on other students for help.</td>
</tr>
<tr>
<td>7</td>
<td>The teacher takes a personal interest in me.</td>
</tr>
<tr>
<td>8</td>
<td>The teacher considers my feelings.</td>
</tr>
<tr>
<td>9</td>
<td>The teacher helps me when I have trouble with the work.</td>
</tr>
<tr>
<td>10</td>
<td>The teacher talks with me.</td>
</tr>
<tr>
<td>11</td>
<td>The teacher moves about the class to talk with me.</td>
</tr>
<tr>
<td>12</td>
<td>It is all right for me to tell the teacher that I do not understand.</td>
</tr>
<tr>
<td>13</td>
<td>I discuss ideas in class.</td>
</tr>
<tr>
<td>14</td>
<td>I discuss my opinions during class discussions.</td>
</tr>
<tr>
<td>15</td>
<td>The teacher's questions help me to understand.</td>
</tr>
<tr>
<td>16</td>
<td>My ideas and suggestions are used during classroom discussions.</td>
</tr>
<tr>
<td>17</td>
<td>I explain my ideas to other students.</td>
</tr>
<tr>
<td>18</td>
<td>Students discuss with me how to go about solving problems.</td>
</tr>
<tr>
<td>19</td>
<td>I discuss different answers to questions.</td>
</tr>
<tr>
<td>20</td>
<td>I have a say in how my class time is used.</td>
</tr>
<tr>
<td>21</td>
<td>I have a say in deciding what activities I do.</td>
</tr>
<tr>
<td>22</td>
<td>I have a say in deciding how my learning is assessed.</td>
</tr>
<tr>
<td>23</td>
<td>The teacher decides when I move on to a new topic.</td>
</tr>
<tr>
<td>24</td>
<td>I am given a choice of topics for assignments.</td>
</tr>
<tr>
<td>25</td>
<td>I work at my own pace.</td>
</tr>
<tr>
<td>26</td>
<td>I carry out investigations to test my ideas.</td>
</tr>
<tr>
<td>27</td>
<td>I have a say in deciding what I do.</td>
</tr>
<tr>
<td>28</td>
<td>I am asked to think about the evidence for statements.</td>
</tr>
<tr>
<td>29</td>
<td>I carry out investigations to answer the teacher's questions.</td>
</tr>
<tr>
<td>30</td>
<td>I solve problems by obtaining information from the library.</td>
</tr>
<tr>
<td>31</td>
<td>I solve problems by using information obtained from my own investigations.</td>
</tr>
<tr>
<td>32</td>
<td>I know what has to be done in this class.</td>
</tr>
<tr>
<td>33</td>
<td>Class assignments are clear so I know what to do.</td>
</tr>
<tr>
<td>34</td>
<td>I do as much as I set out to do.</td>
</tr>
<tr>
<td>35</td>
<td>I know the goals for this class.</td>
</tr>
<tr>
<td>36</td>
<td>I know what I am trying to accomplish in this class.</td>
</tr>
<tr>
<td>37</td>
<td>I pay attention during this class.</td>
</tr>
<tr>
<td>38</td>
<td>I try to understand the work in this class.</td>
</tr>
<tr>
<td>39</td>
<td>I share my books and resources with other students when doing assigned work.</td>
</tr>
<tr>
<td>40</td>
<td>I learn from other students in this class.</td>
</tr>
<tr>
<td>41</td>
<td>I work with other students in this class.</td>
</tr>
<tr>
<td>42</td>
<td>I work in groups in this class.</td>
</tr>
<tr>
<td>43</td>
<td>I cooperate with other students on class activities.</td>
</tr>
<tr>
<td>44</td>
<td>I get the same opportunity to contribute to class discussions as other students.</td>
</tr>
<tr>
<td>45</td>
<td>I get the same amount of help from the teacher as do other students.</td>
</tr>
<tr>
<td>46</td>
<td>I get the same opportunity to answer questions as other students.</td>
</tr>
<tr>
<td>47</td>
<td>I get the same kind of help from the teacher as other students do.</td>
</tr>
<tr>
<td>48</td>
<td>I receive the same encouragement from the teacher as other students do.</td>
</tr>
<tr>
<td>49</td>
<td>The teacher gives me as much opportunity to contribute to class discussions as other students do.</td>
</tr>
<tr>
<td>50</td>
<td>The teacher gives me as much attention to my questions as to other students' questions.</td>
</tr>
<tr>
<td>51</td>
<td>My work receives as much praise as other students' work.</td>
</tr>
<tr>
<td>52</td>
<td>I get the same opportunity to answer questions as other students.</td>
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</tbody>
</table>
Vita

Anne Zoeller is a native of Chicago, Illinois. She received her Bachelor of Science and Master of Science degrees in Plant and Soil Science from Southern Illinois University at Carbondale, in 1977 and 1979, respectively. In 1987, she received her second Bachelor of Science degree in Chemistry from Boston University. She is a Certified Professional Soil Scientist, and holds a secondary school teaching certificate in chemistry.

After graduating from Southern Illinois University, she worked for almost four years as a staff scientist in the Land Reclamation Department at Argonne National Laboratory in Argonne, Illinois. She then became a staff scientist in the Environmental Affairs Department at Commonwealth Edison Company in Chicago, Illinois. Anne moved to Boston, Massachusetts, in 1983. She was an engineering analyst at a consulting firm in Framingham, Massachusetts, before returning to school and completing her degree in chemistry. She was a Staff Assistant for an environmental and geotechnical consulting firm, in Cambridge, Massachusetts, before moving to Baton Rouge, Louisiana, in 1988.

Since 1988, she has served in number of professional positions at Louisiana State University, including those at the Institute for Environmental Studies and the Division of Continuing Education. Anne is presently the Coordinator for Distance Learning in the Louisiana State University Evening School. Anne Zoeller married Erwin Poliakoff in 1983 and their son, David Poliakoff, was born in 1990. She is the daughter of Walter and Eleanor Zoeller and has five brothers and one sister.
Candidate: Anne L. Zoeller

Major Field: Vocational Education

Title of Dissertation: An Examination of Adult Learners, Learning Outcomes, and Selected Learning Environments at a Land-Grant Research 1 University

Approved:

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Betty C. Harrison

Lindsey Frazer

Michael Burnett

Date of Examination:

3/26/98